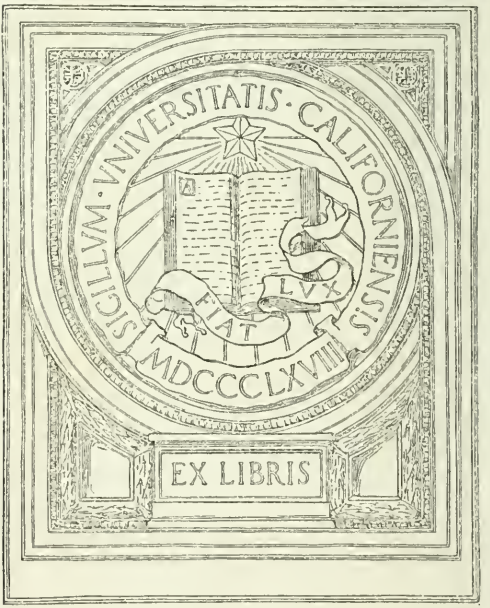


FACTS AND FIGURES,

PRINCIPALLY RELATING TO

RAILWAYS AND COMMERCE.

BY SAMUEL SALT,

AUTHOR OF STATISTICS AND CALCULATIONS.

"Abstracts, abridgements, summaries, &c., have the same use with burning-glasses—to collect the diffused rays of wit and learning in authors, and make them point with warmth and quickness upon the reader's imagination."

SWIFT.

LONDON:

PUBLISHED BY LONGMAN, BROWN, GREEN, AND LONGMANS, PATERNOSTER ROW;

AND W. J. ADAMS, BRADSHAW'S GENERAL RAILWAY PUBLICATION OFFICE, 59, FLEET-STREET.

MANCHESTER:

BRADSHAW AND BLACKLOCK, 27, BROWN-STREET.

AND MAY BE HAD FROM ALL BOOKSELLERS.

1848.

In my "Statistics and Calculations" I stated, "at some future period, the present compiler may publish further Statistics, of a later date, to compare with what is already given." I hope the following may be considered as partly a fulfilment of that promise,

which I may further redeem at some future time. I must refer those who complain that the articles are not arranged under separate heads to the full Index at the end of the book, and inform them that the trifles I have given have occupied me many an evening hour in transcribing from a heterogeneous mass to my memorandum book, which I hope may be found

useful as a "Text Book" and register of facts, to which I was not in a situation to bestow undivided attention.

Samuel Salt.

Manor House,
Ardwick, Manchester,
April, 1848.

FACTS AND FIGURES.

Railway Officers in 1847.—No. I.

The following is a summary of persons employed on all the Railways in England and Wales, Scotland and Ireland, on the 1st May, 1847. Extracted from a Parliamentary Return, No. 597, for 1847.

RAILWAYS OPEN FOR TRAFFIC.

DESCRIPTION.	NUMBER.
Secretaries, Managers, Treasurers	124
Engineers	96
Superintendents	399
Storekeepers	91
Accountants, Cashiers	100
Draughtsmen	100
Clerks	3,432
Foremen	823
Enginemen or Drivers, Assistant Enginemen or Firemen	2,969
Conductors or Guards	1,163
Artificers	10,800
Switchmen	1,041
Policemen	
Porters	8,576
Messengers	
Platelayers	4,148
Labourers	12,493
Gate-keepers	407
Waggoners	151
Breaksmen	49
Miscellaneous Employment	256
Total	47,218
Length of Miles	3,305¾
Number of Stations	1,040

RAILWAYS IN COURSE OF CONSTRUCTION.

DESCRIPTION.	NUMBER.
Secretaries, Managers, Treasurers	235
Engineers	549
Superintendents, Storekeepers	2,382
Accountants, Cashiers	264
Draughtsmen, Clerks	1,437
Artificers, Labourers	240,301
Inspectors	153
Land Surveyors	32
Miners or Quarrymen	6,741
Foremen or Overseers	1,087
Policemen or Gatekeepers	122
Porters, Servants, or Watchmen	16
Platelayers	876
Horse Drivers or Carters	1,793
Miscellaneous Employment	487
Total Number Employed	256,509
Length in Miles	m. ch 6,455 31

Huddersfield and Manchester Railway. Merchandise Traffic.—No. 2.

Before a Parliamentary Committee in 1845, the following weights were proved to pass between the undermentioned places.

Between the following Places.	Description of Merchandise.	Present mode of Conveyance.	Weight in Tons annually.
Huddersfield to Manchester	Merchandise	Canal	23,036
Do.	Do.	Railway	5,122
Do.	Grain & Provisions	Canal	21,736
Do.	Do.	Railway	1,274
Do.	Limestone and Building Materials	Canal	2,600
Do.	Do.	Railway	104
Ashton or Manchester to Saddleworth....	Merchandise	Waggons & Carts	22,451
Do.	Do.	Canal	19,032
Do.	Grain & Provisions	Waggons & Carts	2,067
Do.	Limestone and Building Materials	Do.	4,004
Do.	Do.	Canal	10,400
Marsden to Huddersfield	Merchandise	Waggons & Carts	14,417
Do. do.	Do.	Canal	13,000
Do. do.	Grain & Provisions	Waggons & Carts	1,898
Do. do.	Do.	Canal	5,252
Do. do.	Limestone and Building Materials	Waggons & Carts	7,241
Do. do.	Coals	Do.	23,582
Oldham, Saddleworth and Marsden.....	Merchandise	Do.	260
Marsden, Saddleworth and Marsden	Do.	Canal	3,302
Marsden and Saddleworth.....	Grain & Provisions	Waggons & Carts	936
Huddersfield to Saddleworth	Do.	Canal	2,600
Marsden to Stalybridge	Limestone and Building Materials	Do.	15,600
Huddersfield to do.	Do.	Do	10,530
Ashton or Manchester and Saddleworth ..	Coals	Waggons & Carts	20,787
Do. do.	Do.	Canal	8,528
Cooper Bridge and Huddersfield	Merchandise	Waggons & Carts	12,805
Do.	Do.	Canal	30,810
Do.	Do.	Railway	2,834

Merchandise Traffic.—No. 2. *(Continued.)*

Between the following Places.	Description of Merchandise.	Present mode of Conveyance.	Weight in Tons annually
Cooper Bridge and Huddersfield.....	Grain & Provisions	Waggons & Carts	4,543
Do.	Do.	Canal	33,202
Do.	Limestone and Building Materials	Waggons & Carts	1,683
Cooper Bdge. to Marsden	Do.	Do.	10,400
Do. to Huddersfield	Do.	Canal	15,470
Do. to Marsden Valley	Coals	Waggons & Carts	18,720
Do. to Marsden ..	Do.	Canal	7,566
Do. to Huddersfield	Do.	Do.	8,450
Manchester and places East & North-East of Brighouse.....	Merchandise	Railway	56,030
Do. do.	Do.	Do.	30,602
Do. do.	Grain & Provisions	Do.	29,484
Ashton, Stalybridge, Dukinfield & Wakefield	Do.	Railway & Canal	29,198
Manchester and places East & North-East of Brighouse.....	Limestone and Building Materials	Railway	728

Railway Developments.—No. 3.

Increased Consumption of Fish.—In the year 1829 there were only ten fish merchants in Birmingham, but since the opening of the various railways, which now centre in, or communicate with the town, the number has increased to forty, exclusive of several dealers of smaller note who reside in the suburbs. The quantities of fish consumed has increased, and in round numbers is estimated thus:—

	Tons.	Population.
1829	400	153,000
1835	1,000	160,000
1840	2,500	180,000
1845	3,910	200,000

Railway Passengers in 1846.—No. 4.

Below are particulars of Passengers who travelled on 63 Railways in the United Kingdom, for the year ending 30th June, 1846; from a Parliamentary Return, No. 706, 1847.

PASSENGERS.		RECEIPTS.			
CLASS.	NUMBERS.	CLASS.	AMOUNT. £.	s.	d.
1st Class	6,160,354½	1st Class	1,661,897	19	10½
2nd „	16,931,065⅓	2nd „	1,937,946	19	11
3rd „	14,559,515⅛	3rd „	738,474	4	11
Parliamentary	3,946,922	Parliamentary	293,732	7	0
Mixed	2,193,126	Mixed	93,164	0	0
Total	43,790,983⅝	Total from Passengers	4,725,215	11	8½
		Receipts from Goods, Cattle Carriages, Parcels, Mails, &c.	2,741,200	16	6¼
		Total Receipts	£7,466,416	8	2⅞

London and Birmingham Railway Merchandise Traffic.—No. 5.

It was stated before a Parliamentary Committee, in 1832, that the following traffic passed in the district between London and Birmingham in one year:—

	Tons.	Expense. £	Estimated cost by Rail 112½ miles. £
By vans on road—110 miles	2,315¼	18,522	58,821
By Wagons „ „	12,827⅛	76,965	
By Carts „ „	5,771⅛	34,629	
By Boats on canals 149 „	122,428	306,070	286,940
Total	143,342¼	436,186	345,761

The following is the actual Merchandise Traffic conveyed by the Railway each year:—

Year.	Weight in Tons.	Amount. £ s. d.	Year.	Weight in Tons.	Amount. £ s. d.
1838	5,496	—— — —	1842	144,921	150,288 16 5
1839	45,669½	—— — —	1843	152,477½	168,837 5 8
1840	84,060	—— — —	1844	154,834	169,778 6 6
1841	147,587	—— — —			

The following is a more detailed account for the years 1845 and 1846:—

	Weight of Goods. Tons.	C.	Q.	Mileage.	Gross Receipts. £	s.	d.	Traffic charges as per Published Statement. £	s.	d.	Nett Receipts. £	s.	d.	Average per Ton. Gross Receipts s.	d.	Nett Receipts s.	d.	Average per Ton per Mile. Gross Receipts d.	Nett Receipts d.
1845.																			
Carriers	268,402	15	0	21,607,838	187,706	1	11	15,234	11	1	172 471	10	10	13	11.843	12	10.220	2.084	1.915
Company	12,333	16	0	992,870	5,298	1	5	699	19	10	4,598	1	7	8	7.100	7	5.478	1.280	1.111
	280.736	11	0	22 600,708	193,004	3	4	15,934	10	11	177,069	12	5						
1846.																			
Carriers	422,170	19	0	33,386,061	217,032	8	10	23,756	13	2	193,275	15	8	10	3.380	9	4.718	1.560	1.125
Company	38,020	8	0	3,006,691	20,214	3	8	2,139	9	5	18,074	14	3	10	7.600	9	6.096	1.613	1.442
	460,191	7	0	36,392 752	237,246	12	6	25,896	2	7	211,350	9	11						
Total ..	740,927	18	0	58,993,460	430,250	15	10	41,830	13	6	388,420	2	4	11	7.366	10	5.816	1.753	1.580

Railway Acts in 1846.—No. 6.

The following is an epitome of Railway legislation during session 1846. It will be observed that the Parliamentary Return, No. 708, printed 21st July, 1847, gives a different result, but this return is evidently wrong; in several cases it omits the length of deviation lines, and entirely omits the Dundee and Perth, the Strathearn deviation of the Edinburgh and Northern, and also the length of the Royston and Hitchin, as well as giving its capital erroneously. The return shows the total as follows:—

Length of line ..... 4,618 M. 3 F. 2⅛ C.
Amount of Capital Stock ..... £90,298,430.
Amount of Capital subscribed ..... £57,675,690.
Sum of money that each Company is empowered to borrow ..... £42,318,938 6s. 8d.

The following statement from the Acts, will, I believe, be found more accurate.

Description of Acts.	*Number of Special Acts passed.*				*Length of Railway authorised to be Constructed.*			
	England & Wales	Scotland	Ireland.	Total.	England & Wales	Scotland	Ireland.	Total.
Acts incorporating Companies for the construction of new lines of Railway	27	9	8	44	1202	327	399	1928
Acts incorporating Companies for the construction of lines of Railway in connexion with existing Companies	42	13	8	63	1133	299	198	1630
Acts authorising existing Companies to construct Branch or Extension Lines	85	33	7	125	1013	225	113	1351
Acts not authorising the construction of any new Railway or Branch ...	39	6	..	45	..	..	..	..
Total in 1846.....	193	61	23	277	3348	851	710	4909

Amount of Money authorised to be raised, exclusive of the Capital of Companies formed by the Amalgamation of those previously Incorporated.

SESSION, 1846.	England & Wales.	Scotland.	Ireland.	Total.
	£	£	£	£
By Acts incorporating Companies for the Construction of New Lines of Railways..	31,717,929	5,068,165	6,888,129	43,674,223
By Acts incorporating Companies for the construction of Lines of Railway in connexion with existing Companies	35,444,665	5,970,865	2,752,596	44,168,526
By Acts authorising existing Companies to construct Branch or Extension Lines.	20,611,579	4,484,593	1,110,330	26,206,502
By Acts not authorising the construction of any new Railway or Branch	13,818,523	1,118,940	....	14,937,163
Total in 1846....	101,592,696	16,642,563	10,751,455	128,986,714

Number of Directors in Acts of 1846.—No. 7.

In the session of 1846, the number of Directors appointed in different Railway Acts varied from 6 to 36, and so careless have some of these Acts been got up, that 27 Acts vary in the number prescribed and the actual number mentioned in the Act; these 27 Acts appoint by name 331 Directors, although the same Acts prescribe 356 Directors. The Cork, Blackrock, and Passage Railway prescribe 12 and name 20, as well as take power to reduce the number to 9 or increase to 15; and the Morecombe Harbour and Railway, as well as the Killarney Junction, prescribe 12 and name only 6.

Ancient Importation into Hull.—No. 8.

About 1595, we find entered in the household book of the Cliffords, a sum of eleven shillings "for six cabbages and some caret roots, bought at Hull." These were then imported from Flanders, whence, even Queen Catherine, in the reign of Henry VIII, had her salads. Potatoes and turnips were not generally known, even to the gardener, until the reign of Elizabeth.

Small Steam Carriage.—No. 9.

On the 23rd October, 1847, Mr. Samuel, resident Engineer of the Eastern Counties Railway, conveyed seven persons from London to Cambridge at the rate of forty miles per hour by a steam carriage weighing only twenty-two hundred weight. Some idea of this performance may be gathered by the following comparison:—

A Stage Coach weighs about one ton; four horses and harness one and a half tons; Guard and Coachman three hundred weight, making fifty-three hundred weight, by which seventeen passengers or twenty-one hundred weight were conveyed ten miles per hour, being about two hundred dead weight to one hundred available load.

An Engine, tender, three first and six second class carriages, with driver, stoker, and guards, weigh about seventy tons on the Eastern lines, and will carry about one hundred and ninety-two passengers at thirty miles per hour, being about two hundred and eighty-eight hundred of available load to one thousand four hundred of dead load, or five hundred dead load to one hundred available load.

A Great Western Railway express train weighs about seventy tons, and would convey one hundred and twenty-eight passengers, weighing nine and a half tons, being about eleven hundred dead weight to one hundred available load.

The Steam carriage weighs twenty-two hundred weight, and conveys seven passengers weighing ten and a half hundred weight, being two hundred dead to one hundred of available load; but at four times the speed of the old stage coach.

The entire length of frame of engine and carriage, which is one, 12 feet 6 inches, on four wheels, 3 feet 8 inches in diameter, the leading and driving wheels being of equal size; and the width from centre to centre nine feet, the wheels being outside all. The boiler is a vertical one, on the American principle, consisting of 34 tubes, an inch and a quarter each in diameter, its diameter being 2 feet, and height 3 feet 6 inches. The flue beneath is one foot from the rails, level with the floor, and the entire height of flue, boiler, and chimney, seven feet six inches. The machinery, the working parts of which are all composed of steel, is enclosed in boxes on the sides of the compartment, consisting of two inside cylinders, three inches in diameter,

with a six-inch stroke, crank axle, link motion, with the usual reversing gear. The water tank is in the cross seat, against the division board of the two compartments, and will hold a sufficient supply for a run of from 18 to 20 miles. Coal is used, in consequence of its being so much easier of combustion than coke, in a furnace of such small dimensions. The whole is suspended on spiral bearing springs, and the boiler has borne with ease a pressure of 200 to the square inch.

This little engine accomplished the journey from London to Cambridge (57¾ miles) in 1¾ hour; in more than one instance during which the speed attained was at the rate of 43 miles per hour.

Canal Conveyance Improved.—No. 10.

Very many schemes have been tried to improve Canal conveyance, and much money expended in experimentalizing with Steam Boats, hitherto without complete success, although Mr. Grahame, Messrs. Crowley and Co., Messrs. Pickford and Co., Messrs. Shipton and Co., and Mr. W. Fairburn, of Manchester, have each tried to effect much; and perhaps have paved the way for considerable improvement in this mode of conveyance. Mr. Fairburn says in his remarks on Canal Navigation in 1831:—

"If I fail, I trust that the present attempt will be followed by others more successful."

How far this may be realized time must tell, but I find in the London Mercury for 13th November, 1847, the following remarks:—

"Canal Property Rescued.—Canal proprietors, and parties interested in cheap and expeditious modes of water conveyance, will do well to read a work which is now in course of publication entitled, 'Inland Navigation for 1850; or, Canal Property rescued by the Aquatic Locomotive, combined with a new system of Screw Propulsion.' The author advocates high velocity, proposes to carry passengers at one halfpenny per mile, and attempts to answer the enquiry, 'Is a moderate railway speed attainable or approachable on smooth water; and can it be profitably attained and maintained without injury to canal banks?'"

Statistics of the Scottish Iron Trade.—No. 11.

(From the Glasgow Herald.)

The following interesting statement regarding this important branch of our national manufactures, has been prepared specially for this paper by an intelligent correspondent extensively connected with the iron trade, and possessing access to the most authentic sources of information:—

BLAST FURNACES IN SCOTLAND.—September, 1846.

	In Blast.	Out of Blast.	Re-pairing.	Building (new.)	Total.
Gartsherrie (Lanarkshire)	14	0	2	0	16
Govan „	3	2	1	0	6
Clyde „	5	0	1	0	6
Summerlee „	5	0	1	0	6
Langloan „	6	0	0	0	6
Dundyvan „	8	0	1	0	9
Carnbroe „	3	1	2	0	6
Calder „	5	3	0	0	8
Monkland „	7	0	2	0	9
Omoa „	3	1	0	0	4
Coltness „	5	0	1	0	6
Shotts „	3	0	1	0	4
Castlehill „	2	0	0	1	3
Glengarnock (Ayrshire)	4	1	0	2	7
Blair „	2	0	1	4	7
Lugar „	2	0	0	2	4
Muirkirk „	2	2	0	0	4
Eglinton „	0	3	0	0	3
Garscube (Dumbartonshire)	2	0	0	0	2
Carron (Stirlingshire)	3	2	0	0	5
Kinnie (Linlithgowshire)	4	0	0	0	4
Devon (Fifeshire)	1	1	0	0	2
Forth „	4	0	0	1	5
	93	16	13	10	132

The Bunaw furnace, near Oban, in Argyllshire, is not included in the above list, as it only produces 25 to 30 tons weekly of charcoal pig iron, the whole of which is shipped to Wales for the manufacture of tin-plate, and it therefore does not come into the Glasgow market.

PROPOSED FURNACES.

New furnaces are proposed to be erected at the following places during the course of 1847, provided the minerals turn out abundant and of good quality, viz. :—

Portland, near Kilmarnock	(Ayrshire)	4
Dalmellington, near Ayr	,,	4
Blair (additional)	,,	2
Eglinton ,,	,,	3
Clyde ,,	(Lanarkshire)	1
Coltness ,,	,,	2
Forth ,,	(Fifeshire)	4
		20

SCOTTISH IRON TRADE (INCLUDING BUNAW FURNACE) AT VARIOUS PERIODS.

	Furnaces in Blast.	Out of Blast.	Total.
May, 1805	18	10	28
December, 1825	17	8	25
May, 1843	67	27	94
December, 1843	60	38	98
October, 1844	70	33	103
April, 1845	84	21	105
October, 1845	91	37	128
June, 1846	101	30	131
Sept. 1846 (with Bunaw).	94	39	133

AVERAGE PRODUCTION FROM EACH FURNACE IN SCOTLAND.

In 1805	25 tons weekly.
In 1825	33 to 34 ,,
In 1843	106 to 107 ,,
In 1844	107 ,,
In 1845	107 to 108 ,,
In 1846	110 ,,

SHIPMENTS.

Shipment of pig iron from 1st January to 1st May, 1846, including foreign as well as coasting vessels :—

From Clyde	41,980 tons.
From Port Dundas	42,315 ,,
From Kirkintilloch	9,024 ,,
Total	93,319 tons.

Mode of Telegraphing previous to the Electric Telegraph.—No. 12.

The old mode of Telegraphs, or Semaphores, was to move certain pieces of wood or metal, in the form of arms, fans, or shutters, by mechanical means so as to be understood by another person at a distance in a similarly elevated spot, and thus the English Government, for many years, maintained a telegraphic communication between London and Portsmouth, composed of many elevated points as stations, from which communications were made to each other, and in a few minutes throughout the whole distance of 72 miles. With reference to this telegraph, a return was made to Parliament in 1843, shewing that it cost annually from £3,000 to £3,500, and was open for work in the summer 7 hours and in winter 5 hours each day, and during 1839, 1840, and 1841 there were, on an average, 108 days each year in which it was not available. I have often witnessed the great annoyance at Liverpool when many were anxious to know what was passing Holyhead, but disappointed by a foggy or rainy day. It appears the Admiralty Semaphore, between London and Portsmouth, was not available one-fifth of the year, or 1,600 out of 8,760 hours. This system of telegraphing will be discontinued by Government after the 31st December, 1847, and superseded by the Electric Telegraph.

Curious charges for damage done to Passengers by the overturning of a diligence.—No. 13.

The following curious statement is extracted from the Railway Times, 11th September, 1841 :—

"It appears that last April the 'diligence' between Rochechouart and Limoges, when conveying a number of witnesses to appear on a trial about to come on before the Court at Limoges, was overturned, and many of the passengers were more or less seriously injured. All arrangements for a compromise having failed, actions were brought against M. Peniceaud, the proprietor of the diligence, and the following sums were awarded to be paid by him for the damages occasioned. The list is curious :—for a broken thigh, 3,300f. ; a bruise on the abdomen, 800f. ; a wound in the head, 600f. ; the entire loss of a nose, 4,500f. ; a broken rib, 1,000f. ; a broken shoulder, 1,000f. ; a rupture, 2,000f. ; a wound in the head, 600f. ; a contusion, 500f. ; ditto, 400f. Total, 14,700f."

Railway travelling easy and smooth in its motion.

No. 14.

A curious experiment was made, which most satisfactorily proves the extraordinary equable motion of passenger carriages on the Croydon Atmospheric Railway. The test was most simple and unerring. A halfpenny was placed on the step of the carriage, and though the train passed to and fro, the whole length of the atmospheric line (five miles), yet not only was the coin not ejected from the step, but so uniform had the motion been, that on measuring the distance it had moved, half an inch was sufficient to cover it!

And the Ayr Advertiser, 7th April, 1842, says:—

"A few days ago, one of the joiners at the Ayr Railway station, having occasion to put some repairs on the carriage nearest the engine, left his tools—a hammer, &c.—on a step of the carriage. As shewing the smoothness of the line, and easy motion of the carriages, the train started, and the tools were still on the step on the arrival of the train at the Glasgow terminus! The guard brought them back to Ayr the same day, being only 4½ hours out of the owner's possession."

The Lead Trade at Newcastle-upon-Tyne.—No. 15.

"An important branch of trade has recently arisen in the port of Newcastle, which, from being an exporter only of lead, has latterly become an importer of the article on a large scale. It has been found that Spanish lead can be imported, and after undergoing a patented process, by which the silver is extracted, sent abroad again at a profit. The consequence has been, that large importations have taken place into the port of Newcastle during the last ten months; and the lead being permitted to be taken from the bond-warehouse to the manufactory, is afterwards returned to the custody of the Customs, and exported as opportunity offers. The quantity of foreign lead imported and warehoused at Newcastle for the purpose of having the silver extracted and then exported was, in the period from August, 1845, to June, 1846, inclusive, 2,730 tons 8 cwt. There was exported during the same period under bond, in pigs, 37,034 cwt.; in sheets, pipes, &c., 3,187 cwt. Free, in pigs, 23,761 cwt.; in sheets, pipes, &c., 7,478 cwt. Litharge, 3,474 cwt., red, 9,113 cwt.; and white, 5,697 cwt. A trade so extensive cannot fail in proving highly beneficial to the district."—*Times*, 7 July, 1846.

Railways how far Profitable, and Extent.—No. 16.

Mr. Mangles, said in the House of Commons on the 19th March, 1846:—

"He believed that on the whole number of railways in England the average profit was 5½ per cent.; the companys had borrowed largely, instead of paying up their capital; thus higher dividends were paid to the shareholders; and he believed that, if the whole capital were paid up, the average profits would not exceed 3½ per cent. (Hear, hear.) To encourage this enterprise there should be prizes, for there were many blanks. The Blackwall Railway, for instance, cost 300,000*l.* a-mile for 3½ miles, yet 1½ per cent. was the highest dividend paid, and in several years there had been none. Yet this had been a most useful railway, and in 1844 it carried 3,449,000 passengers. By the report of the Gauge Commissioners it appeared that in England there were 2,264 miles in actual operation. Parliament had in 1844 sanctioned 787 more miles, which he knew to be in a great part opened, making 3,051 miles opened; and in 1845 there were 2,840 miles sanctioned, which were likely to be opened, making a total of 5,891 miles opened or in progress; but in France there were only 376 miles actually opened."

Statistics of Bookselling in Ireland.—No. 17.

In Ireland there are 74 towns, each with a minimum of 2,500 inhabitants (census 1841) not one of which contains a bookseller, Scotland, with a third of the population, has three times the number of booksellers, being in the proportion of nine to one! The 74 towns without one "of the trade," include the following:—

Dungarvon	12,382	Cashel	8,027
Carrick-on-Suir	11,049	Newtownards	7,621
Youghal	9,939	Lisburn	7,524
Carrickfergus	9,379	Kinsale	6,918

More remarkable still—there are six counties which cannot boast of even one bookseller, and we shall name them:—

Donegal.	Queen's.
Kildare.	Westmeath.
Leitrim.	Wicklow.

These may be considered strange, and most assuredly they are very startling facts!

The Collieries of Northumberland and Durham.—

No. 18.

The capital employed in the coal trade of Northumberland and Durham, 1846, including railways and harbours for colliery purposes, is estimated at nearly ten millions sterling. The collieries, which were only 59 in 1828, had increased to 129 in 1846. The pumping engines amounted in the aggregate to 10,919 horses' power; the drawing engines, 8,285 horses' power; capable of raising 57,713 tons of coals daily, or 15,005,000 tons per annum of 260 days. But the total vend of coal in 1845, was only 6,790,993 tons; the proportion of the vend to the extreme powers of production, being 100 to 147. The following table exhibits the progress of the coal trade of the two counties, from 1800 to 1845:—

Year.	Coastwise Vend. Tons.	Oversea Vend. Tons.	Total. Tons.
1800	2,381,986	138,089	2,520,075
1815	2,717,509	159,174	2,876,683
1835	3,290,511	494,485	3,784 996
1840	4,391,085	1,196,299	5,587,384
1845	5,059,880	1,731,113	6,790,993

The increase being, in the 45 years, in the home vend, 212 per cent.; in the foreign vend, 1,254 per cent.; and in the aggregate vend, 270 per cent. The following were the numbers employed in collieries in those two counties in February, 1844:—

On River,	No. of Collries	A	B	C	D	E	F	G	Total.
Tyne	66	5858	4710	1663	1855	919	849	661	16515
Wear	31	5100	3135	1548	1507	670	764	448	13172
Tees	22	1851	1136	313	441	199	216	55	4211
	119	12809	8981	3524	3803	1788	1829	1164	33898

A, hewers; B, putters, trappers, and boys under 20 years; C, overmen, deputies, wastemen, &c.; D, bankmen, breakmen, enginemen, &c.; E, carpenters, smiths, masons, &c.; F, boys of all kinds under 20 years; G, persons employed in shipping coal, &c.

Creative Power of Railways.—No. 19.

"The Tees formerly imported coal from the Tyne: the Stockton and Darlington Railway extending into the Auckland coal-field, the collieries of which competed by land-carriage on nearly equal terms with the Newcastle collieries by sea, in supplying the little seaport of Stockton with coals. On opening the railway, in 1825, Stockton became a coal shipping port, and soon proved inadequate for the rising trade. In 1820, Middlesborough consisted of one solitary farm-house; this, with from 500 to 600 acres of land, was purchased by Mr. T. Richardson, of Stamford-hill, Essex, and of Allonby, in this county; Mr. E. and J. Pease, both of Darlington; and two or three others, all railway proprietors. The railway was extended to this place (about five miles), docks excavated, a thriving town sprung up; in 1836 a new church was erected; in 1837 a British school opened; in 1842 extended accommodation was required for the shipment of coal. Drops were placed skirting the spacious docks of nine acres, just excavated, which are connected with the main line of railway by 10 threefold branches, laid upon a triangular platform 15 acres in extent, having standing-room for 3,000 loaded wagons, or 9,000 tons of coals, ready to drop into the vessels. The town has for some years been lighted with gas; has several schools, chapels, a mechanics' institution, a news-room, a branch bank, a custom-house, ship-building yards, various manufactories, three iron foundries, and extensive rolling mill for bar iron; and but last week a splendid town-hall and an extensive market-house were opened. The port is said not to be equalled by any in the north (excepting the Forth), having 25 feet of water on the bar at low water (more than either Newcastle or Sunderland can boast at high water), and it is accessible by night as well as by day. It will be anticipated that much business must be done in this place. Accordingly, we find, from authentic records, that the shipments of coals on the river Tees have been at Stockton, 1844, 22,644 chaldrons (of 52 cwt.), and in 1845, 21,170; whilst at Middlesborough, the shipments were 137,885 and 195,796 chaldrons. From the latter place it is said 70,000 chaldrons of Brancepeth coke were shipped by one establishment to railway companies, iron foundries and others, in the three kingdoms; and, besides, 268,105 tons of coals were shipped by the Clarence Railway in the past year, making the shipments of coal from the Tees now to exceed three times the quantity shipped at our good old port of Whitehaven."—*Gateshead Observer*, as quoted in the *Times*, 1st January, 1847.

Enemies to Railways.—No. 20.

At a meeting of the Liverpool, Manchester, and Newcastle Junction Railway, held in Manchester, 31st August, 1847, Sir Ralph Pendlebury, of Stockport, said :—

"The reason our trade was so bad he attributed, principally, to the Railway system; he would not pay any more money to them, he would stop such business and wind up; he could not see what good was done to the country by them; his opinion was, that the sooner the Railways were put an end to, the better for the country."

And in December, 1845,—

Mr. Berkeley, the M.P. for Cheltenham, thus delivered himself at a meeting respecting the lines affecting Cheltenham :—"So much for my public connexion with this railway; now for myself—Gentlemen, as an individual, I hate your railways, I detest them altogether; I wish the concoctors of the Cheltenham and Oxford, and the concoctors of every other scheme, including the solicitors and engineers, were at rest in Paradise. Gentlemen, I detest railroads; nothing is more distasteful to me than to hear the echo of our hills reverberating with the noise of hissing railroad engines running through the heart of our hunting country, and destroying that noble sport to which I have been accustomed from my childhood, and to which I would humbly hope that the good town of Cheltenham owes some little of its prosperity. Such are my feelings against railroads; but I know it is useless for me to attempt to stem the stream of public opinion, and my object in joining the Cheltenham and Oxford Company is to secure to Cheltenham a more direct means of communication than she now possesses. My object has been to benefit Cheltenham, and although I know I have incurred great unpopularity by so doing, I feel that I could do nothing else. By promoting facilities of communication, I have felt that must benefit this town, which depends so much upon its visitors."—*Railway Chronicle, January 3rd*, 1846.

And again—

At a meeting held at Tewkesbury, one of the speakers contended that "'any railway would be injurious;' likened railways to 'war-horses and fiery meteors,' and believed that 'the evils contained in Pandora's box were but trifles compared with those that would be consequent on railways."

And in the House of Commons, on the 1st Feb., 1847—

"On the second reading of the London, Oxford, and Cheltenham Railway Bill, Colonel Sibthorpe stated his intention to watch this bill, as he had reason to suspect, from the erasures he had seen in the papers in the Private Bill-office, that all had not been fair and above-board. At the same time, he knew it was useless to divide the house against the second reading of a railway bill. For his own part, he had pursued but one independent course,—he had assented to none. (A laugh.) He had known such doings, that he declared he would rather meet a highwayman, or see a burglar on his premises, than an engineer; he should be much more safe, and, of the two classes, he thought the former the more respectable." (Laughter.)

Maximum Charges allowed by Railway Acts passed in 1846.—No. 21.

	Lowest maximum charge.	Highest maximum charge.
	D.	D.
ANIMALS, per mile		
Horses	2	7
Cattle	1½	4
Calves and Pigs	0½	3
Sheep	0½	3
CARRIAGES per mile	4	10
GOODS per ton, per mile		
Manure	1	3
Coals	0¾	4½
Corn	1½	6
Cotton and General Merchandise	2	6
PASSENGERS, per mile		
First Class	2	3½
Second Class	1½	2½
Third Class	0¾	1½

It may be interesting to record that the Birmingham, Lichfield, and Manchester Railway Company are authorised to charge "any sum they may think fit," for passengers by first class trains travelling at 30 miles per hour, including stoppages.

Dublin and Kingstown Railway.—No. 22.

Statistics from 1840 to 1846.

Classification of passengers for the last seven years, including subscribers.

Years ended last day of February.	1st class.	2nd class.	3rd class.	General total.
1840 ..	30,442 ..	550,414 ..	700,105 ..	1,280.761
1841 ..	35,558 ..	724,105 ..	759,383 ..	1,519,024
1842 ..	37,001 ..	840,116 ..	754,968 ..	1,632,085
1843 ..	68,156 ..	960,937 ..	729,788 ..	1,758,878
1844 ..	98,076 ..	1,049,243 ..	814,732 ..	1,962,051
1845 ..	104,109 ..	1,219,556 ..	910,768 ..	2,234,433
1846 ..	141,911 ..	1,293,524 ..	913,178 ..	2,348,613

	Years ending February, 1843.		1844.
Trains despatched	27,728	..	29,564
Miles travelled	166,340	..	177,384
Average coaches per train	6·780	..	7·484
Average passengers per train	63 220 lbs.	..	66 366 lbs.
Consumption of coke per train per mile ..	22·880 Pence.	..	24,107 Pence
Average receipts per passenger per mile ..	1·050	..	0·968
Gross receipts £42,401	3s. 1d.	£45,255	8s. 2d.

	Years ending February, 1845.		1846.
Trains despatched	30,745	..	30,970
Miles travelled	184,170	..	185,520
Average coaches per train	7·511	..	7 550
Average passengers per train	72·676 lbs.	..	75·830 lbs
Consumption of coke per train per mile ..	24·220 Pence.	..	26 740 Pence.
Average receipts per passenger per mile ..	0·893	..	0·883
Gross receipts £51,187	6s. 7d.	£53,036	19s. 1d.

Third class morning tickets, year ended

28th February, ...	1842 ..	30,514
" "	1843 ..	37,310
" "	1844 ..	116,920
" "	1845 ..	174,802
" "	1846 ..	192,154

The following are the results of the Dalkey line during the year ending 28th February, 1846 :—

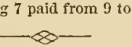
Trains despatched from both ends	21,708
Coaches moved	75,924
Passengers conveyed	240,742
Average coaches per train	3·497
Do. passengers per train	11·090
Do. passengers per coach	3·170
Total cost of power and maintenance of way per train per mile.	Pence. 10·7

Railways — Capital required for Construction, and Income.—No. 23.

Mr. Hudson, on the 19th March, 1846, said, in the House of Commons—

"That out of the 800 schemes deposited with the Board of Trade, a great number would fail to make the deposits, and appear before Parliament. The number that actually so appeared was 440, and he believed he was also not far from the truth in his prediction that about 100,000,000*l.* would be required for those bills that succeeded in obtaining the assent of Parliament in the present session. The deposits made by the bills before the Board of Trade were between 10,000,000*l.* and 11,000,000*l.*, being ten per cent. on the railways projected, which very nearly corroborated his calculation. He denied that the large sums employed in railways were a tax on the surplus capital of the country; they were merely a transfer from the capitalists of the country to the landlords. Out of 100,000,000*l.* invested in railways, he estimated that not less than 20,000,000*l.* went to the landlords, which they applied either to the improvement of the land, or lent it in turn to some railways. He had ascertained that out of 45,000*l.* per mile that the London and Birmingham Railway cost, 9,000*l.* per mile was paid to the landowners. The Midland Railway cost 37,000*l.* per mile, one-fifth of which in like manner was paid to the owners of the land. Another sum of 5,000,000*l.* went to the landowners in payment of the royalties, ballast, timber, &c. Then the contractor's profit was 10 per cent. The decrease in the poor-rates through the construction of railways was not less than from 2,000,000*l.* to 3,000,000*l*, from 7,000,000*l.* to 9,000,000*l.* being paid to the labourers employed in the construction of the different railways. The tax upon the surplus capital of the country altogether was not more than 50,000,000*l.* sterling, and that he could not consider a large amount. A few years ago we raised from 80,000,000*l.* to 90,000,000*l.* in taxation, when we only raised 50,000,000*l* at present, although the country was much better able to bear the larger sum now than it was then. The railway bills passed in 1844 empowered the expenditure of 14,000,000*l.* in railways, Sir R. Peel had calculated the sum to be raised under bills passed in 1845 at 50,000,000*l.*; and he (Mr. Hudson) from his acquaintance with the railways under his own direction, could state that between 200 and 300 miles would, by August or the Autumn of next year, be in active operation. It should be remembered that a large income was now arising from rail-

way investments, which was being applied to the construction of new lines. Trustees and other parties in want of safe investments were buying into lines, paying 5 per cent. upon their capital, while speculators were selling out of such railways, and investing in new lines that promised to pay more. The income from railways he estimated at 7,000,000*l.* a year; the weekly returns, he saw by the railway papers, were 120,000*l.*, and they would soon be 140,000*l.*; and taking that average, and making allowance for the new lines about to be opened, the receipts from railways would amount to from 8,000,000*l.* to 9,000,000*l.* for the present year. Formerly large sums were expended in the improvement of canals, which had become partly useless, and less productive than before. Out of 39 railways, in which 69,000,000*l.* were embarked, only 12 railways paid 5 per cent., and only 14 from 5 to 6 per cent. There were 6 railways which paid 8 per cent., and the remaining 7 paid from 9 to 10."



Extraordinary exertion of the Times Newspaper.—No. 24.

In the Manchester Times of the 5th June, 1846, it is stated that Mr. W. H. Smith, in a letter to Mr. B. Wheeler, Manchester says:—

"'I never saw and never knew of greater energy and activity than that displayed on all sides this (Friday) morning. I had dispatched 4,000 copies of the *Times*, to all parts of the north, by the specials, within an hour and a quarter of the rising of the house. The debate and division, and an article upon it, were set up, and the paper 'made up,' sent to press, and these 4,000 copies printed in that short space of time.' This is the most extraordinary effort yet recorded in the annals of the newspaper press, and could not have been surpassed by any other newspaper establishment in the world. Closing the report of a debate; writing a leading article upon it; composing or 'setting-up' the type; reading, or 'correcting the press;' printing-off, or machining, *four thousand* copies of the paper; dispatching the papers from the *Times*-office to the Strand (where Mr. Smith's office is situated), and from thence to Euston Square railway station, a distance of two miles—all this may be regarded as an unprecedented effort, worthy a distinguished notice in the history of newspaper printing."

Railway Prospectuses in 1845.—No. 25.

Many persons will recollect the imaginative and seductive colourings given by the late George Robins, in his advertisements of sales of property; but perhaps more have suffered by the delusive manifestoes of lawyers, engineers, and needy gentlemen made in their prospectuses for Railways in 1845 and 1846, and to record the folly of the age, I have extracted a few specimens of this puffing:—

"Romantic scenery," "highly remunerative," "handsome rate of interest," "immense local influence," "imperatively called for," "essentially necessary," "rich agricultural *and* manufacturing," "interests mercantile, mineral, and manufacturing," "wealthy and populous," "districts densely populated, commercial and manufacturing, *as well as* highly cultivated agricultural," "advantages which it is impossible to overrate;" or sometimes a more modest "unwillingness to overrate," "perfect communication," "country *singularly* adapted to the course of the line," "enormous national benefit," "facility of intercourse," "centre whence *radii* diverge," "the Switzerland of England," "the Portal of the Peak," "the Garden of Devon," "all laboured efforts to detail the traffic, &c. would fall short of the reality," "each is left to draw on his own imagination," "*unabated confidence* in ultimate success."

A witty writer thus satirized on this subject:—

"Engineering difficulties, of course there are none:—there never are. In fact, the country "presents every facility." Accomodating country! All is a "dead level." No tunnels; no bridges worth mentioning; the cuttings mere cheese-parings. Common eyes might come to very different conclusions; but then what can *they* know of the matter? An extension of capital by the issue of new stock remedies all miscalculations of cost pleasantly and simply. The traffic is disposed of in a fashion equally summary. *What* it is, it might not be convenient to tell, but this is of little moment, as there is a golden future in store, seeing that the lines "traverse important districts of country, *which only require to be opened up to*

insure a large amount of local traffic." Important districts! Local traffic!. Populous wastes! Most promising country truly! But then there are the well-known mines of, &c.!" What the "&c." may cover, it is difficult to say; but it *ought* to cover a great deal, for it is certain that a railway would transport the whole yearly produce of the lead mines of Tyndrum in a couple of days."

Public Conveyances in Paris.—No. 26.

"A Parisian has made the following calculation as to the sums made in Paris by its inhabitants for the use of public conveyances, such as coaches, cabriolets, omnibuses, &c. According to official documents Paris counts

	Francs.
558 hackney coaches, let at 15f. a-day	8,370
42 chariots, 2 horses, at 12f. a-day	504
506 chariots, 1 horse, at 12f. a-day	6,062
733 cabriolets, 2 and 4 wheels, at 12f. a-day	8,796
197 additional coaches, at 12f. a-day	2,364
340 omnibuses, at 60f. a-day	20,400
1,068 coaches, 2 and 4 wheels, at 15f. a-day	16,020
Total	62,516

which makes the annual sum of 22,817,340f., or upwards of £912,600 sterling. This enormous expense, borne by a million of the inhabitants of Paris and strangers visiting it, does not amount to more than 6 centimes for every inhabitant,—a little more than a halfpenny of English money."—*Times*, 20*th July*, 1846.

A Railway Train without a Passenger.—No. 27.

"A circumstance occurred at the North Union Railway Station, at Preston, on Sunday last, to which there is probably no parallel since the opening of the railway. The train which leaves the Preston Station at half-past four o'clock in the afternoon, took its departure without a single passenger. Considering that the traffic from Preston is generally so extensive, it is something rather singular that such an event should have happened. The different officers present when the train left, declared their belief that a similar circumstance had never before happened at that station."—*Manchester Guardian*, 25*th Nov.*, 1846.

Powerful Goods Engine.—No. 28.

In the Manchester Guardian of the 22nd August, 1846 is the following:—

"On Saturday last, a trial was made on the Manchester and Birmingham line, of a powerful engine (No. 30) made by Messrs. Sharp, Brother, and Co. for the company, and possessing several improvements suggested by Mr. John Ramsbottom, the company's locomotive superintendent. A train of merchandise was drawn by this engine from Manchester to Crewe, which comprised 97 waggons, the gross weight of which was 586 tons, the net weight of the goods 264 tons. The rate of speed varied from 15 to 25 miles per hour, and during the whole journey their was a full supply of steam."

And in the Manchester Guardian of 7th October, 1846, as follows:—

"Monster Train.—On Saturday 3rd, October, 1846, a train of merchandise left Manchester for Crewe, composed of 101 waggons. Its gross weight was 600 tons, and its length 1,550 feet. The distance 30 miles, was accomplished in two hours nine minutes, being at the rate of 14 miles per hour over gradients varying from 1 in 377 to 1 in 880. The engine, made by Messrs. Sharp, and Co. was accompanied by Mr. Byer, Mr. Ramsbottom, and Mr. Salt."

Since this period the Engine has been at regular work and given great satisfaction. During the month of January 1847, it conveyed from Manchester to Crewe, 1645 Waggons, being an average of 63 $\frac{1}{26}$ Waggons per day, working daily, except Sundays.

How to Make Money.—No. 29.

John Brooks, in his evidence on Navigation Laws, 30th March, 1847, speaking of the uncertainty of obtaining loading from Batavia, was asked:—

"Would you send a ship out to Batavia?" "No: we say in Manchester, that 'a nimble ninepence is better than a dull shilling.'"

Charge on Coals into Manchester, and Population of England and France.—No. 30.

Mr. Morrison, stated in the House of Commons on the 19th March, 1846 :—

"In some railways, as they well knew, the rates for passengers varied from 1½d. to 4d. and 6d. As to coal, he had been told that on two roads which led into Manchester, and which conveyed coal into that town, there was as much as a difference of 250 per cent. in the rate of charge. It appeared that the population in France for every square mile was 167, whereas in England it was 297 ; and, if they took 10 of the principal towns in France and compared them with 10 of the principal towns in England, they would find a great preponderance in favour of the towns in England. The population of London was 1,873,600, whilst the population of Paris was only 875,495. The population of Manchester was 296,000, that of Marseilles was only 147,000 ; the population of Liverpool was 187,000, that of Lyons was 147,000 ; Birmingham was 182,000, Rouen was not nearly so much ; Sheffield was 68,000, and Amiens only 44,000. Or, in the whole of 10 towns in England there was a population of 3,400,000, and of 10 towns in France 1,679,280. The returns from the principal ports showed just the same relative proportions. In the port of London the number of vessels was 2,792, and the tonnage 573,000 ; and in Liverpool the number of vessels was 1,282, and the tonnage 242,000. If he compared these with Havre and Bordeaux, he found that the number of vessels at Havre was 342, and the tonnage 64,000 ; and at Bordeaux the number of vessels was 365, and the tonnage 61,000. He could compare also Newcastle with Nantes, and Sunderland with Marseilles, and so on ; but the result was, that in the 10 principal ports, there were in England 8,688 vessels, with a tonnage of 1,766,000 ; whilst in France there were 2,991 vessels, with a tonnage of 336,000."

Poor Dividend.—No. 31.

"In Friday's *Gazette*, May 1st 1847, a dividend of three thirty-seconds of a penny in the pound is announced on the estate of Rice Harris, of Birmingham, glass manufacturer. Thus a creditor to the extent of ten pounds would receive the munificent sum of one penny, less two thirty-seconds ; supposing he had a coin of that value with which to give the change."

Tolls for Coals.—No. 32.

At the annual general meeting of the Newcastle and Carlisle Railway, on the 27th March, 1846, the following remarks were made:—

"Mr. Hodgson observed that experience had tested the wisdom of low rates, and if the charge upon coal upon this line exceeded 1d. per ton, he should certainly divide the meeting on the question of reducing it.

"The Chairman would like to know a case where a lower charge was made. When the Company found wagons the charge was 1d. 1-8th per ton per mile, when they did not find wagons 1d. per ton per mile.

"Mr. Hodgson—'Is that for coals for exportation?'

"The Chairman—'Yes.'

"Mr. Hodgson—'What is the tonnage on coals for home consumption?'

"The Chairman—'Three halfpence per ton per mile, and when the Company find wagons 1¾d. When the coals are screened through a half-inch screen, 1d. and 1¼d. when the Company find wagons.'

"Mr. Hodgson then proposed that the tonnage on coals for home consumption be in future 1d. per ton per mile. He believed if the cost of transit were reduced to ¾d. a ton, it would leave a profit of 75 per cent., but he did not propose to reduce it to that extent.

"The Chairman remarked that it was at any rate desirable to meet the question fairly. The Company was entitled to charge as pontage, dues on three miles on the railway, as a compensation for building the expensive viaduct at Weatherell, and if the amount they were entitled to levy on that account were deducted, it would be found that the tonnage did not exceed ¾d. per ton."

A Manchester Merchant.—No. 33.

In the evidence before the Select Committee on Navigation Laws, 30th March, 1847, John Brooks, of Manchester, stated as follows:—

"I have been a calico printer and flax spinner, and a merchant abroad, shipping goods to 30 or 40 places; for instance, I had generally an average of 150,000*l.* abroad, and sometimes 200,000*l.*; in 1845 I had 204,000*l.* sterling abroad; that shows the extent of business I have done."

Comparative Value of Cast Iron & Manufactured Articles.—No. 34.

The British Quarterly Review, for November, 1845, says:—

"To show how cheaply the metal is obtained, and how the mechanical skill and labour expended upon it totally overshadow the original price of the metal, we take a quantity of cast-iron, worth £1 sterling, and attach its money value when converted into finished articles:—

Cast-Iron worth £1 sterling, is worth when converted into			
Ordinary Machinery	£4	0	0
Larger Ornamental Work	45	0	0
Buckles and Berlin Work	660	0	0
Neck Chains, &c	1386	0	0
Shirt Buttons	5896	0	0
Bar-iron worth £1 sterling is worth when worked into			
Horse Shoes	£2	10	0
Knives (Table)	36	0	0
Needles	71	0	0
Pen-Knife Blades	657	0	0
Polished Buttons and Buckles	897	0	0
Balance Springs of Watches	50,000	0	0

Milk by Railway.—No. 35.

In 1832, Mr. Henry Booth stated before a Parliamentary Committee, on the London and Birmingham Railway, that—

"The Liverpool and Manchester Railway had been conveying milk 15 miles as an experiment for one farmer."

In 1844, my attention was given to the subject, and I prevailed on the farmers on the Manchester and Birmingham Railway, between Crewe and Manchester, to try this conveyance for milk to Manchester; the result was satisfactory; for it produced upwards of £1,000 per annum, in 1846, averaging from 100 to 150 cans each day, at a charge of 6d. or 9d. per can of 36 quarts, and 9d. or 1s. for 72 quarts. Since then the Grand Junction Railway have cultivated this traffic, and now realize more than £4000 per year by it.

Discouragement of Third Class Passengers.

No. 36.

A writer in the Edinburgh Review for Oct. 1846, animadverts on the discouragement of third-class passengers, which he maintains to be the prevalent policy of our English lines. He gives the following proportions of railway passengers out of every hundred, in England and Belgium:—

	British.	Belgian.
1st Class passengers	16½	10
2nd Class ditto.	43½	30
3rd Class ditto.	40	60
	100	100

The revenue on British lines exhibits the same deficiency from the third-class passengers as compared with foreign railways:—

	British.	Belgian.
1st Class (out of every £100	£40 11	£20
2nd Class ditto	42 16	33
3rd Class ditto	16 10	47
	£100 0	100

So that in England the Passenger Traffic is mainly drawn from the first and second class passengers, in Belgium from the second and third, but chiefly from the third. The writer attributes this to four principal causes: first, high fares; second, carriages uncomfortable and unsafe; third, inconvenient hours; fourth, slow speed.

Cost of Coke made by Railway Companies.—No. 37.

At a meeting of the Edinburgh and Glasgow Railway Company, 14th September, 1847, Mr. Peter Blackburn, the chairman, said:—

"It had cost them 29s. per ton when made by themselves; but they had contracted to have it delivered at Edinburgh for 22s. 6d. per ton, thus saving 25 per cent."

Profits on Sugar from Batavia.—No. 38.

On the 30th March, 1847, John Brooks, Manchester, gave the following evidence before the Select Committee on Navigation Laws :—

"'Have you had any dealings with Batavia?' 'Yes.'

"'Will you state what those dealings have been?' 'I have carried on business with Batavia for 20 or 25 years, and I have had generally 20,000*l*, to 25,000*l*. there.'

"'Will you state what goods you have exported to Batavia?' 'Calico goods and prints, and other goods occasionally.'

"'Goods which you manufactured?' 'Yes.'

"'What goods did you bring home in return?' 'I had few articles that I could bring home before the alteration of the sugar duty, but the moment that alteration took place, so that free labour sugar could come into this country, I wrote to Batavia, desiring them to send sugar as payment for my goods. On the 31st of October, 1845, I had sugar on board the Crishna British ship, which cost me 4,077*l*. 15*s*.; that sugar was brought to England, and I sold it in London, on April 11th, 1846, for 4,878*l*. 19*s*. 2*d*. I got a profit on that sugar of 801*l*. 4*s*. 2*d*., or 19 per cent.; that was a new trade. Then on November 6th, 1845, by the same ship, I had another lot of sugar which cost me 1,167*l*. 7*s*. 2*d*., and I sold that on March 31st, 1846, in London, for 1,422*l*. 18*s*. I got a profit of 255*l*. 10*s*. 10*d*., or 21½ per cent.; that is still a little better. Then in consequence of the scarcity of British vessels, particularly at Batavia, for there was no British vessel to be had there, I was obliged to send the next lot of sugar from Batavia to Amsterdam by an American vessel. That sugar was bought in November, 1845, and it lay in Batavia until March 10th, 1846, and at last we met with an American ship, and it was shipped to Amsterdam; that sugar cost 3,793*l*. 7*s*. 8*d*., and was sold last November at Amsterdam for only 3 012*l*. 7*s*. 11*d*., thereby I lost 780*l*. 19*s*. 9*d*. besides 7 months' time; the loss was 20 per cent. That sugar was lying in Batavia when the Crishna left, and if I could then have shipped that sugar to London, it would have brought me 1,561*l*. 10*s*. 6*d*. more than it actually brought me. I had a loss of 780*l*. 19*s*. 9d., whereas I should in that case have had a profit which would have made 1,561*l*. 10*s*. 6*d*. more money, making a difference of 41 per cent.'"

Fight on a Locomotive Engine.—No. 39.

The following is so unusual and so dangerous a fracas that I copy it from the Standard of September, 1846.

"Dangerous Fracas on a Locomotive Engine.—On Saturday evening, when the 6 30 a.m. mixed train from Bristol was between Steventon and Didcot stations, on the Great Western Railway, a quarrel arose between Temple, the engine driver, and Poole, the stoker. A fight ensued on the engine, and if both had fallen off the consequences must have been dreadful, as the train was going at the rate of nearly 30 miles an hour, and there was no possibility of the guards getting to the engine to stop it, the high third-class carriage being between them; nor were they aware of the fight until Temple, finding himself worsted, stopped the engine to endeavour to throw Poole off, when the guards alighted and succeeded in obtaining a cessation of hostilities until their arrival at Didcot, when they were reported to Mr. Bishop, the superintendent, who gave them into custody of the guards of the fast train, and conveyed them to Paddington, where their conduct will be investigated by the directors. Their places were supplied by others at Didcot, and the train reached Paddington in safety."

Men of Different Countries do not Work Well Together.—No. 40.

In the evidence on the Navigation Laws, J. Brooks stated, on 30th March, 1847, with reference to a number of foreigners on an English vessel:—

"My belief is, that there is a fourth of foreigners allowed to come in an English vessel; but the English ships do not keep up that fourth, for this reason, that the sailors cannot agree; I have had a good deal to do with the management of my men in Lancashire. I have fought several battles with my men. There are men there called 'flints' and 'knobsticks.' I have had 60 soldiers and 3 officers for nine months at my works, and I understand therefore a good deal about that, and when they are mixed together they do not agree."

Tonnage Entering America from 1789 to 1844.

No. 41.

The following statement exhibiting the amount of all British, Foreign, and American tonnage which entered the ports of the United States in the above years, is extracted from the evidence of J. Mac Gregor, taken before the Select Committee on Navigation Laws, 11th March, 1847 :—

Years ending 31st of December.	British.	Total Foreign including British.	Total American.	Years ending 31st of December.	British.	Total Foreign including British.	Total American.
	Tons.	Tons.	Tons.		Tons	Tons.	Tons.
1789	94,410	106,654	127,329	1817	174,935	215,166	780,136
1790	216,914	250,746	355,079	1818	118,538	161,414	755,101
1791	210,618	240,448	363,854	1819	36,333	85.898	783,579
1792	206,065	244,278	414,679	1820	47,365	78,859	801,252
1793	100,180	163,566	447,754	1821	52,976	81,520	765,098
1794	37,058	82,974	525,649	1822	80,940	100,541	787,961
1795	27,097	56,832	580,277	1823	86,009	119,468	775,271
1796	19,669	46,846	675,046	1824	54,682	102,367	850,033
1797	33,168	72,757	608,078	1825	63,034	92,927	880,754
1798	40,773	87,760	522,245	1826	82,117	105,654	942,206
1799	54,087	107,583	626,195	1827	101,470	137,589	918,361
1800	71,689	121,403	682,871	1828	98,851	150,223	868,381
1801	111,593	157,270	849,302	1829	86,158	130,743	872,949
1802	104,473	145,519	787,301	1830	100,298	131,900	967,227
1803	104,336	163,714	787,424	1831	239,502	281,948	922,952
1804	73,500	122,141	821,962	1832	311,569	393,038	949,622
1805	65,408	87,842	922,098	1833	402,730	496,705	1,111,141
1806	69,350	91,084	1,044,008	1834	453,495	568,052	1,074,670
1807	64,727	86,780	1,089,876	1835	529,922	641,310	1,352,653
1808	34,551	47,674	525,130	1836	544,774	680,213	1,255,384
1809	71,808	99,205	603,931	1837	543,020	765,703	1,299,720
1810	52,286	80,316	906,434	1838	484,702	592,110	1,302,974
1811	10,647	33,302	948,247	1839	495,353	624,814	1,491,279
1812	1,196	47,098	667,999	1840	582,424	712,363	1,576,946
1813	90	113,827	237,348	1841	615,623	736,444	1,631,909
1814	568	48,301	59,626	1842	599,502	732,775	1,510,111
1815	145,364	217,413	700,500	1843	453,894	534,752	1,443,523
1816	212,426	259,142	877,462	1844	766,747	916,992	1,977,438

Cobden's Opinion of Railways.—No. 42.

At a meeting at Stockport, on the 10th December, 1847, Mr. R. Cobden made the following remarks; whether he is correct or not, it is natural he should point out some cause for the present distress which will not implicate "free trade," for which he has been so able an advocate, and so well paid:—

"Many people tried to mystify the matter, and talked about there not being money enough to do those things; but the fact was, if all the linen cloths in the country were to be made into bank notes, and each note stamped for 1,000*l.*, it would not enable all the railroads to be made in five years that should be made in twenty-five or thirty years. He was not telling them this after it had happened only; for last year, before going abroad, he penned a petition from the Manchester Chamber of Commerce on the subject of railway bills. He might be asked why he had not raised his voice against the system in the House of Commons. For himself, he was engaged up to July in the business of the corn-law; and so many of the members were engaged in railway bills, either for themselves or their constituents, that it would have been of no use protesting against the granting of these bills. Of all the mad things ever done by any body of men, he believed that the House of Commons, by granting these railway acts during the last three years, had done the most insane act ever perpetrated by any public body. Something was being done—not much he believed, to remedy the evil; but the directors of railways would be obliged to suspend their works, because the shareholders would not be able to pay the money demanded of them; and the result would be, that that which ought to have been originally attempted within ten or fifteen years, would be done in ten or fifteen, instead of five years, while a great deal of mischief would be still done, not only to the speculators, but also to the trading interests of the country generally."

Hay Fired by Sparks from an Engine.—No. 43.

The Railway Record, of 10th April, 1847, says:—

"Last week a field of dry grass, near Derby was set on fire by a spark from a passing train, and entirely consumed."

Railway Gradients.—No. 44.

In the early stage of railway locomotives it was necessary to have good gradients on railways; but since the great improvements in the locomotive, it is not found desirable to expend so much money in insuring such easy gradients. In 1845 the West Riding endeavoured to show a parliamentary committee that it was desirable to have steeper gradients, in order to economise the first cost, while its rival, the West Yorkshire, pointed out the value of good gradients; and on these schemes the railway department of the Board of Trade report as follows:—

"The improvements that have taken place in the construction of the locomotive engine have greatly enlarged the standard of its capabilities. Not many years ago, any thing steeper than 1 in 200 was looked upon as a decidedly objectionable feature in a line, and enormous expense was incurred in avoiding gradients of steeper inclination.

"The difference of expense in construction between a line with first class gradients, as it was called, *i. e.*, none steeper than 1 in 200, and one with second class gradients ranging up to 1 in 100, was frequently not less than 10,000*l*., 20,000*l*., or even 30,000*l*. per mile. The London and Birmingham, Great Western, and Brighton lines, for instance, averaging above 50,000*l*. per mile, while the Grand Junction and London and South Western did not exceed from 20,000*l*. to 25,000*l*. Experience has fully proved that no saving either in time or economy of working has been attained at all commensurate to this enormous additional outlay of capital. Indeed, in many cases, cheaply-constructed lines have been worked at an equal or less expenditure for locomotive power, and at as high an average velocity, as lines constructed at twice the expense.

"The Lickey Incline, on the Birmingham and Gloucester Railway, is a conclusive proof that a gradient of 1 in 37½ for a length of 2 miles 3 chains may be worked by the aid of an engine constructed for the purpose, without serious inconvenience to an extensive traffic. It is also a proof that such an incline may be descended without danger by the force of gravity, regulated by the action of breaks.

"The Sutton incline of 1 in 88, on the Liverpool and Manchester Railway, is surmounted by the ordinary trains of that railway, whose traffic is of a very heavy description, with a single locomotive engine.

"On the Newcastle and Carlisle line, an incline of 1 in 106 for 4 miles consecutively is surmounted by the ordinary trains without difficulty or delay.

"The use of a stationary engine for ascending the incline on the Manchester and Leeds Railway from the Victoria station, which is 1 in 59 for 1,000 yards, and 1 in 49 for 640 yards, has been in a great measure discontinued, the ordinary engines being found capable of taking up it heavy passenger and goods trains of not less than 80 tons weight.

"On the Edinburgh and Glasgow Railway, stationary power has likewise been discontinued, the locomotive engine being found a more efficient and economical substitute on the Glasgow incline of 1 in 42 for 1¼ miles; and recently the locomotive engine has been equally substituted for stationary power upon the inclined plane of the London and Birmingham Railway, from the Euston-square terminus to Camden Town, parts of which are at 1 in 66 and 1 in 75.

"Many other facts of a similar nature might be quoted, but the above seem quite sufficient to establish the general proposition,—

"1. That gradients of from 1 in 50 to 1 in 100 are perfectly practicable to the ordinary locomotive engine, with moderate loads.

"That gradients up to 1 in 37½ or higher may be surmounted by heavy trains, with the aid of an assistant engine of peculiar construction."

Railway Curves.—No. 45.

It is a question whether railway companies ought to expend so much money in making a straight line, or avoid expensive works by allowing greater curves; on this subject the Board of Trade report in 1845 as follows:—

"On this point also practical experience has led to a great modification of the ideas formerly entertained. The Newcastle and Carlisle Railway presents an instance of a line which is almost one continued succession of curves, of every degree of curvature, up to eight chains radius, and with steep inclines, being worked with economy and safety.

"The Manchester and Liverpool Railway Company, in their extension line through Salford, have introduced curves, bending in a serpentine direction, two of which have radii of 10 and 12 chains respectively, over which all their trains pass daily.

"The Manchester and Leeds line has two curves of 10 chains radius, away from any station, and in a gradient of 1 in 82, over which their trains have been worked for upwards of four years, without the slightest accident or practical inconvenience."

Advantage of Railways.—No. 46.

In 1845 the Manchester and Leeds Railway Company informed the railway department of the Board of Trade that they had brought down the charges for conveying goods:

"Per ton between Manchester and Hull, ninety-nine miles.

	Before the Railway opened in 1840. About			Now		
	£	s.	d.	£	s.	d.
Corn, Flour, &c.	1	4	0	0	13	0
Cotton Twist.....	1	12	6	1	0	0
Manufactured Goods	2	5	0	1	4	0

"The saving to the public by this reduction of cost of conveyance upon the traffic now passing by the various modes of conveyance may be estimated at not less than from 200,000*l.* to 300,000*l.* a year, independently of the very great advantage to the manufacturing districts of reducing the time of transit to their principal places of export and import, Liverpool and Hull, to a few hours.

"As one instance of the benefits resulting to the manufacturing community we may mention, that very recently, on a strike of the colliers in the Lancashire district being apprehended, arrangements were instantly made by the Manchester and Leeds Company with other northern railways, by which a supply of 20,000 tons of small or refuse coal, from the county of Durham, was rendered available at a low rate of cost for the engines of Manchester, whereby the danger of a stoppage of the mills, and consequent throwing out of employment of thousands of hands, was in a great measure averted."

In December, 1847, the charge for flour and grain was 17s. 6d. per Ton

Railway Capital.—No. 47.

In the House of Commons, on the 26th November, 1847. The Chancellor of the Exchequer, in reviewing the whole amount of capital which had been expended on the railway system, gave the following statistics:—

"So far back as 1826, no less a sum than 2,500,000*l.* was authorized to be raised for the purpose of investment in Railways. In the period extending from 1826 to 1835 Parliament Authorized 19,000,000*l.* to be raised. In 1836 and 1837, which were years of great commercial prosperity, Parliament authorized 36,000,000*l.* and upwards to be raised. In 1844 and 1845 the sum authorized to be raised for the purpose of Railways was 74,000,000*l.* In 1846, Parliament authorized no less a sum than 132,000,000*l.* to be raised for the purposes of Railways; but in the present year of 1847 the amount authorized to be raised for the purposes of Railways was only 38,000,000*l.* From a calculation made by Mr. Porter, it appeared that there remained to be raised after the end of 1845, 145,000,000*l.*, to which must be added the 38,000,000*l.* empowered to be raised last year. From a calculation made by the Railway Board, which he should presently shew to be based upon facts, it appeared that the capital authorized by Parliament to be raised:—

In 1840 was	£4,000,000
1841	3,500,000
1842	6,000,000
1843	4,000,000
1844	18,000,000
1845	69,000,000
1846	124,000,000
1847	28,000,000

The expenditure, from the calculation of the Board, was estimated as follows:—

In 1841	£1,407,000
1842	2,980,000
1843	4,435,000
1844	6,100,000

and in the first half year of 1845, 3,500,000*l.*; in the second half, 10,6000,00*l.*; making 14,100,000*l.* for the year. The expenditure for the first half of 1846 was 9,800,000*l.*, and during the last half, 26,675,000*l.*, or, for the whole year, 36,485,000*l.*; and for the first half of 1847, 25,700,000*l.*

Christmas Presents in 1847.—No. 48.

The following shows the quantity of Parcels forwarded and received by coach trains at London, by the London and North-Western Railway, during four days previous to Christmas-day :—

1847.	Forwarded.	Received.	1847.	Forwarded.	Received.
Dec. 21st	2,628	1,628	Dec. 23rd	4,694	3,162
,, 22nd	4,260	2,606	,, 24th	5,265	2,030
Total...				16,847	9,426

Total in and out 26,273, or 6,568¾ each day.

And the same Company, at Manchester, London-road Station—

1847.	Forwarded.	Received.	1847.	Forwarded.	Received.
Dec. 21st	198	222	Dec. 23rd	273	525
,, 22nd	241	388	,, 24th	308	555
Total.....				1,020	1,690

Total in and out 2,710, or 677½ each day.

The Norfolk Railway Company, from a district of turkeys and such like, sent and received as under, at stations on their line, on the 21st, 22nd, 23rd, and 24th Dec., 1847 :—

Stations.	Received.	Forwarded.	Stations.	Received.	Forwarded.
Yarmouth	682	588	Wymondham	70	45
Mutford	6	13	Hardingham.....	4	18
Somerleyton	6	14	Thuxton.....	3	4
Haddiscoe	33	70	Yaxham	4	7
Lowestoft	131	92	Dereham	209	318
Buckenham	6	15	Attleboro'	101	125
Brunda'l.....	—	7	Eccles	27	45
Norwich.....	1100	2890	Harling	58	58
Trowse	34	100	Thetford.....	80	113
	TOTAL			2554	4522

From the 18th to the 24th December, 1847, a period of six days, there arrived in London, from the agricultural districts of Norfolk, Suffolk, Essex, Herts, and Cambridgeshire, viâ the Eastern Counties Railway, 7,447 sacks of flour, 11,546 sacks of malt, 3,198 sacks of wheat, 3,414 sacks of barley, 1,374 sacks of oats, and 1,052 sacks of seeds; 353 tons of dead meat, 193 tons of fish, 94 tons of poultry and game, 133 tuns of beer; 5,594 sheep, 545 oxen, 181 pigs, 10,600 quarts of milk, 2,400 loaves of bread, and 480 tons of coal. During the same period, 17,209 parcels by passenger trains also came to hand, of which 6,000 were turkeys for Christmas cheer.

Cost of Limestone on the Trent and Mersey Canal.—No. 49.

In a report of the Trent and Mersey Canal read at the North Staffordshire railway meeting, on the 5th July, 1847, it is stated:—

"Your committee have made arrangements with the Stafford and Worcester Canal, which have enabled them to revise the dues between Haywood and Preston Brook, which are now reduced to one half-penny per ton per mile. This arrangement involved a revision of the price charged by the company for limestone; and, it having been found that the sale of the limestone to the South Staffordshire iron carriers, at what was supposed to be the cost price of 10d. per ton, was under its value by at least 5d. per ton, new regulations have been introduced, by which the stone will be sold at its real value."

Traffic on the Mersey & Irwell Navigation.—No. 50.

An Account of the Merchandise Traffic on the Mersey and Irwell, or Old Quay Canal, on Freight (*i.e.*, conveyed by the Old Quay Company's own vessels) in the month of April, 1847, between the specified places and Manchester, in Tons.

From	To Manchester.									
	Cotton.	Dry-salteries.	Dye-woods.	Grain.	Iron.	Slates.	Timber.	Clay.	Sundries	Total Weight Tons.
Liverpool	232	125	108	891	..	..	445	..	424	1,780
										445
Runcorn.....	..	..	..	..	223	304		34	..	561
	232	125	108	891	223	304	445	34	424	2,786

To	From Manchester.									
	Bales, Cases Trusses Casks Etc.	Sundries								
Liverpool	967	79	..	..	.	..	..	..	..	1,046
Total Weight to and from Manchester ..										3,832

An Account of the Weight of Goods &c. conveyed on the Old Quay Canal on tonnage, (*i.e.*, by sundry carriers, paying toll,) in the month of April, 1847, between the specified places and Manchester.

From	To Manchester.										Total Weight Tons.
	Cotton.	Dry-saltories.	Grain.	Flags, Stone &c	Iron.	Groceries.	Road materials.	Slates.	Timber.	Sundries	
Liverpool	1721	260	2335	..	..	359	..	..	..	214	4,889
									1916		1,916
Runcorn.....	..	..	..	380	1062	..	1005	841		..	3,288
	1721	260	2335	380	1062	359	1005	841	1916	214	10,093

To	From Manchester.										
	Bales, Cases Truss Casks Etc,	Sundries									
Liverpool	2152	781	..	..	..	..	..	..	..	..	2,933
	Total Weight to and from Manchester ..										13,026

Grand Total Weight of Traffic on the Old Quay Canal for April, 1847 :—

FROM AND TO MANCHESTER.

	Tons.	
From Liverpool and Runcorn, on Freight.....	2,786	
To Liverpool.....	1,046	
On Freight	——	3,832
From Liverpool and Runcorn, on Tonnage	10,093	
To Liverpool	2,933	
On Tonnage	——	13,026
Grand Total Weight		16,858

The Mersey and Irwell Companies' shares, originally worth £70, sold for £1250 before the opening of the Liverpool and Manchester Railway, in 1830. In 1845 the Trustees of the late Duke of Bridgewater purchased the Navigation and Working Stock.

Income of the Leeds and Liverpool Canal.—No. 51.

The traffic &c. on this Canal may be seen on reference to Salts's Statistics and Calculations, and the following statement shows the

Income of the Leeds and Liverpool Canal and Douglas Navigation, for the year ending 31st December, 1841.

	£	s.	d.	£	s.	d.
Income by Tonnage,						
Leeds & Liverpool Canal	125,083	8	9¼			
Douglas Navigation	18,076	2	10¾			
Leigh Branch	5,732	16	5			
				148,892	8	1
Received for Rents, including the profits of Packets	9,670	2	4½			
Deduct Rent, &c., paid.....	1,142	17	0½			
				8,527	5	4
Gross Income				£157,419	13	5
Outgoings, Leeds & Liverpool Canal.						
Repairs 16,700 3 5						
Damages & Taxes 1,581 13 1¼						
Wages & Expenses 4,182 16 6						
	22,464	13	0¼			
Douglas Navigation.						
Repairs 3,112 2 2						
Damages & Taxes 174 10 6½						
Wages & Expenses 514 7 6						
	3,801	0	2½			
Leigh Branch.						
Repairs..... 709 8 6						
Damages & Taxes 36 14 10						
Wages & Expenses 152 10 11						
	898	14	3			
Expenses of Committees, Agents, Salaries, Bankers, and Law Charges, &c., &c.	3,269	12	11			
				30,434	0	4¾
Net Income				£126,985	13	1¼
Dividends paid this year	97,940	13	4			
Interest paid on money borrowed ..	4,476	11	2			

Improvements.					
Fonbridge Reservoir		6	0	0	
Bridge and Basin at Leeds		858	11	8	
Whitemoor Reservoir		1,048	5	7¼	
Shed at Liverpool		634	16	11	
Cottage at Wigan		28	16	7	
New Wharfs at Liverpool		1,113	12	6	
Enlarging Offices at Liverpool		134	8	0	
					106,241 15 9¼
Surplus					£20,743 17 3
Of this surplus the sum of has been paid in reduction of the Company's Debt and the residue has been ordered also to be applied to the same purpose in 1842.					£10,584 15 0
The Debt due on Loan from the Company 1st of January, 1842, was					£105,795 4 8

Traffic at Ellesmere Port.—No. 52.

The following is the actual traffic for the week ending 25th September, 1847.

Number of Flats and Floats towed up and down, from and to Liverpool and Ellesmere Port 149
Number of Coasting Vessels to Ellesmere Port with Iron Ore, &c. 6
Weight of Goods and Iron shipped from Ellesmere Port to Liverpool ..... 1786 tons
Weight of Goods, Iron, Timber, &c. shipped from Liverpool to Ellesmere Port ..... 932 tons
Weight of Iron Ore shipped, on tonnage, to Birmingham .. 630 tons

Railway Calls not paid up duly.—No. 53.

At a meeting in Manchester, relating to Railways, held on the 30th September, 1847, it was stated by Mr. Thomas Greig:—

"I have had reason to know, no later than last week, with reference to a railway that I had to look into, that although the fourth call is on the eve of being paid, there are many connected with that line who have neither paid the first, the second, nor the third call."

Value of Railway Property in 1843.—No. 54.

The following is the result of a return of the annual value of Railway Property, made to the Income Tax Commissioners to April, 1843, for each county in England and Wales. It appears from this return that Middlesex, the smallest county but one in England, was richest in railways, having an annual income of £960,443. Lancashire comes next, with a clear annual value of £593,515. Surrey is next, with £191,018; then Durham with £171,089; Derbyshire, with £104,204; and Yorkshire with £95,510 There were still twenty counties in England and five in Wales altogether without the benefit of railways. The value of railways in each county was as follows:—

England. Counties.	Income. £	s.	d.
Bedford	—		
Berks	—		
Bucks	—		
Cambridge	—		
Chester	7,273	0	0
Cornwall	2,345	14	6
Cumberland	1,186	0	9
Derby	104,204	0	0
Devon	—		
Dorset	850	0	0
Durham	171,089	16	8
Essex	—		
Gloucester	3,920	3	3
Hereford	474	15	6
Herts	—		
Hunts	—		
Kent	1,250	0	0
Lancaster	593,515	6	7
Leicester	72,280	4	1
Lincoln	—		
Monmouth	12,540	17	1
Norfolk	—		
Northampton	—		
Northumberland	57,534	17	0
Notts	—		
Oxford	—		
Rutland	—		
Salop	—		
Somerset	3,858	10	7
Southampton	8,982	2	0
Stafford	2,455	5	0

England—*Continued.* Counties.	Income. £	s.	d.
Suffolk	—		
Surrey	191,018	6	7
Sussex	—		
Warwick	61,826	8	0
Westmorland	—		
Wilts	—		
Worcester	—		
York	95,510	13	5½
Wales.			
Anglesea	—		
Carnarvon	2,309	0	0
Denbigh	—		
Flint	374	0	0
Merioneth	600	0	0
Montgomery	—		
Brecon	—		
Cardigan	—		
Carmarthen	970	0	0
Glamorgan	17,222	0	0
Pembroke	597	15	11
Radnor	316	0	0
London	42,661	0	0
Westminster	—		
Middlesex	960,443	18	1
England & Wales	2,417,609	18	0½
Scotland	181,333	1	6
Great Britain	£2,598,942	19	6½

Age of Members of the House of Commons.—No. 55.

The House of Commons, as at present constituted, consists of 656 members, the two vacant seats for Sudbury being still in abeyance, making the total number 658. Of these there are 44 members between the ages of 21 and 30, 159 between 31 and 40, 213 between 41 and 50, 155 between 51 and 60, 67 between 60 and 70, and 15 above 70. The oldest member in the house is Mr. Denison, the member for West Surrey, aged 77—the youngest the Earl of Grosvenor, member for Chester, aged 22. The average of the entire house is 50 years.—*Jersey Times*, as copied in the *Times* 25th February, 1847.

Paper Making.—No. 56.

Paper-making is carried on extensively in the United Kingdom, chiefly in Kent, (the chalky streams of which are said to be favourable to the manufactnre,) the country aronnd London, Lancashire, Yorkshire, and Durham; in the vicinities of Edinburgh and Glasgow, and in the "Collection" of Naas, in Kildare; and the number of mills, in 1839, was 512; whereof 411 were in England, 47 in Scotland, and 54 in Ireland, each paying an annual license costing £4. An excise on paper was first levied in Britain in 1711 (10 Anne, c. xix.); which, after many fluctuations, was fixed, in 1803 (43 Geo. III. c. lxix.), at 3d. per lb. on first class paper, and 1½d. per lb. on second class, "made of old ropes or cordage only." In Ireland the duties, first levied in 1798, (by a license upon the engine, according to the contents of the vat,) were assimilated to the preceding in 1824. The high duty on the first class, and the inconveniencies, evasions, and frands, attending the other regulations, were long the subject of complaint. At length, on the recommendation of the Fourteenth Report of the Commissioners of Excise Inquiry, the duty was, by 6 and 7 William IV., c. ii., imposed at a uniform rate of 1½d per lb. on all classes. This change has led to a considerable increase of trade, and has been otherwise highly beneficial. In 1835, the quantity charged with duty was, in England, 64,899,901 lbs.; in Scotland, 12,015,059 lbs.; and, in Ireland, 2.702,352 lbs; total 79,617,312 lbs.; the nett produce of duty being £796,305. But, in 1841, the quantity charged was, in England, 76, 292,724 lbs.; in Scotland, 16,821,354 lbs.; and, in Ireland, 3,991,472 lbs.; total, 97,105,550 lbs.; yielding, of nett duty, £587,380; the quantity having thus increased 22 per cent., while the revenue has only fallen off 26 per cent.

Hire for British Ships, and cost of Provisions, &c., at South Shields.—No. 57.

Mr. R. Anderson, of South Shields, gave the following particulars before the Committee on Navigation Laws, 24th June, 1847, showing the rate of hire for British ships in the North American, Baltic, and Coal Trade; together with that of their Wages, Cost of Provisions, Ropes, and Sails, in periods of Four Years, from 1817 to 1846.

YEARS.	Rates of Freight.												Coal Trade.
	America.			Baltic.			Petersbugh Freights.						
	Quebec Timber.			Lower Port Timber			Memel Timber.			Deals.			Clean Hemp			Tallow			Coals per ton to Londn.
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
Average of four years, from 1817 to 1820 (A)	2	16	3	2	7	6	1	2	7½	4	3	1½	2	18	1½	1	16	0	0	9	11½
Average of four years, from 1821 to 1824 (B)	2	9	4½	2	3	9	1	2	9	4	3	9	2	15	7½	1	15	1½	0	9	10
Average of four years, from 1826 to 1829 ..	2	1	10½	1	16	3	1	0	0	3	12	6	2	10	0	1	8	10½	0	8	9
Average of four years, from 1830 to 1833 (c)	1	18	9	1	13	9	0	19	0	3	8	10½	2	8	9	1	7	0	0	8	2
Average of four years, from 1834 to 1837 ..	2	1	3	1	16	6	0	18	10	3	9	6	2	8	0	1	7	3	0	8	2½
Average of four years, from 1838 to 1841 ..	2	1	0	1	17	0	0	19	6	3	6	0	2	6	0	1	6	0	0	8	8
Average of four years, from 1842 to 1845 ..	1	14	8	1	11	7	0	15	9	2	11	1½	1	15	7½	1	0	6	0	6	9¼
Average for the year 1846	1	19	1	1	16	3	0	18	0	2	19	4	2	2	0	1	2	0	0	7	1

YEARS.	Rates of Wages.							Price of Provisions.									Sails & Cordage.		
	America.			Baltic.			Coal Trade	Irish.									Sails No. 1		Cordage.
	Per Month.			Per Month			Per Voyge.	Beef pr Tce	Pork per Barrl	Fresh Beef pr cwt		Bread pr cwt	Ind up pr yd.		Cordage pr cwt				
	£	s.	d.	£	s.	d.	£ s. d.	s.	d.	s.	d.	s.	d.	s.	d.		s.	d.	s. d.
Average of 4 yrs., 1817 to 1820 (A)	2	13	9	2	16	3	3 4 9	124	0	107	6	3	7½	24	3		2	3	56 7½
Average of 4 yrs., 1821 to 1824 (B)	2	13	9	2	15	7	3 7 4½	102	6	65	7½	43	11½	20	3		2	0	52 9
Average of 4 yrs., 1826 to 1829....	2	16	3	3	0	7½	3 18 1½	101	3	73	6	51	4½	22	6		1	10	52 3
Average of 4 yrs., 1830 to 1833 (c)	2	16	3	2	18	9	3 11 3	105	3	68	9	46	6	21	10½		1	9½	47 9
Average of 4 yrs., 1834 to 1837....	3	5	0	3	5	0	4 5 0	107	6	68	0	47	3	17	8		1	10	38 6
Average of 4 yrs, 1838 to 1841....	3	10	0	3	10	0	4 12 6	117	0	83	0	52	3	23	10		1	10½	48 0
Average of 4 yrs., 1842 to 1845....	2	18	1½	2	19	4½	3 13 1½	91	6	67	6	47	5½	19	6½		1	9½	39 7½
Average for 1846 ..	3	0	0	3	2	0	4 0 0	102	6	73	6	53	2	20	0		1	9	39 9

(A) Duty of 10s. a load laid on American timber. (B) Reciproeity treaties commenced with Prussia in May, 1824. (c) Duty on Coals repealed in 1832.

Quarrels between Directors and Proprietors.—
No. 58.

It is fortunate there are not many such scenes on record as those which took place in Exeter, at a meeting of the Exeter and Crediton Railway, 12th April, 1847, after almost personal violence and efforts to eject the chairman :—

"Mr. Brown, director of the Exeter and Crediton and deputy-chairman of the Bristol and Exeter Railway, sprung forward and caught up the minute book, which was lying on the table. Mr. Thorne, one of the directors appointed by the Taw Vale shareholders, immediately collared and grappled with Mr. Brown, and Mr. Bastard, a director, clung to the skirts of Mr. Thorne's coat. At this time a rush was made by the directors' party, and the book was thrown by Mr. Brown on the floor and passed to the secretary (Mr. Hartnell). Surrounded by the whole body of shareholders and directors composing the minority, the secretary was escorted from the room, with the book, amid a scene of unparalleled disorder."

Merchandise on the Midland Railway in 1846.
No. 59.

Weight of Goods and Minerals conveyed upon the Midland line during 12 months ending 31st Dec., 1846.

Month.	Goods.			Minerals.			Total.		
	Tons	cwt.	qrs	Tons	cwt.	qrs	Tons.	cwt.	qrs.
January	52,610	14	0	36,564	19	2	89,175	13	2
February	51,881	2	2	32,110	14	2	83,991	17	0
March	62,116	7	2	32,589	18	3	94,706	6	1
April	56,368	19	3	31,508	0	1	87,877	0	0
May	58,480	1	1	33,515	10	1	91,995	11	2
June	56,371	13	2	24,533	14	1	80,905	7	3
July	61,976	5	2	30,109	13	0	92,085	18	2
August	61,158	9	0	33,357	7	2	94,515	16	2
September	72,972	5	1	33,652	3	0	106,624	8	1
October	77,533	12	2	36,647	8	2	114,181	1	0
November	73,748	13	2	36,021	0	2	109,769	14	0
December	74,566	11	1	38,223	3	2	112,789	14	3
	759,784	15	2	398,833	13	2	1,158,618	9	0

Electric Telegraph in America in 1846.—No. 60.

Government news and merchants' correspondence were communicated by Telegraph in America as under, in 1846:—

	Miles.
Albany to Buffalo	350
New York to Boston	220
New York to Albany	150
New York to Washington	230
Washington to Baltimore	40
Baltimore to Philadelphia	97
Philadelphia to New York	88
Washington to Newhaven	84
Newhaven to Hartford	30
Hartford to Springfield	20
Springfield to Boston	98
Albany to Rochester	252
	1659

Mr. Hawkshaw, Engineer of the Lancashire and Yorkshire Railway.—No. 61.

At a meeting of this Company, 1st September, 1847, Mr. Holdsworth stated, in reply to complaints of Mr. Hawkshaw's salary—

"There is no gentleman present connected with Railways but is well aware of the immense amounts that have been earned and obtained by railway engineers during the last few years; and this Company had to find their engineering talent from amongst those gentlemen whose talents were in a demand that doubled, trebled, or quadrupled any expectations which they could have previously formed of their remuneration. Now, what we did was, first to endeavour to secure an efficient and an able engineer; and we have done so. I will say no more on that subject. Those gentlemen who have acted with Mr. Hawkshaw, and witnessed his exertions in this company, and in public, well know how to appreciate those exertions. But it was open to Mr. Hawkshaw to lend his services to the public, for the best sum he could get. This Company, however, said, 'Our concerns are of sufficient importance to make it the duty of the directors to

secure the services of some one man wholly to ourselves;' and we therefore said to Mr. Hawkshaw, 'What will you accept, in order to give us the whole of your services, not only as engineer, but as general adviser, and as taking a responsibility in the general management of the undertaking?' We made that proposition to him, and, after consideration, he named a sum which at the time, and I am sure upon consideration, and upon a knowledge of what other engineers of less standing have obtained, appeared to me exceedingly moderate. When we looked on the one side, to the amount of engineering work we had to do, and on the other to the efficiency of Mr. Hawkshaw's services, we found that if we did not engage Mr. Hawkshaw, the amount of money we must have paid for independent engineering services would have been more than double; and I have estimates before me here that will justify that amount; for I have had an estimate made out of the charges at the very lowest scale which we should have had to pay to an independent engineer, and I find that in the year 1845 alone, it would have amounted to £12,000. I say that in that year alone we must have paid £12,000 to an independent engineer, instead of what we did pay (£5,000) to Mr. Hawkshaw. The session after, although not quite so bad, was still to a considerable extent the same, and I believe there is no arrangement we have made—(and I know that in saying this I am speaking the sentiments of all my colleagues)—which has more conduced, and will more conduce, to the interests of the company than that."

Depreciation of Property in 1847.—No. 62.

The year 1847 will be memorable as one of the most disastrous in our mercantile annals. A decline in consols from 100 to 75 represents a depreciation in the public securities of £168,000,000. The fall in railway shares, estimated at 50 per cent., shows a diminution of £60,000,000 in the value of this property. The failure of commercial establishments is probably understood at £20,000,000. The loss on East and West India produce, machinery, and manufactured articles is computed at £100,000,000. It is difficult to estimate the actual depreciation of Colonial property in plantations and buildings; some have raised it as high as £400,000,000, and if this prove correct, the loss of imperial treasure during this year does not fall short of the national debt.—*British Banner, 7th January*, 1848.

Tonnage of the United Kingdom, from 1821 to 1846.—No. 63.

Mr. G. R. Porter gave the following statements of the amount of Tonnage of Ships registered, and belonging to the United Kingdom and its Colonies, in each year, from 1821 to 1846, to the Committee on Navigation Laws, 1st July, 1847.

YEARS.	United Kingdom.	Colonies.	TOTAL.
1821	2,355,853	204,350	2,560,203
1822	2,315,403	203,641	2,519,044
1823	2,302,867	203,893	2,506,760
1824	2,348,314	211,273	2,559,587
1825	2,328,807	214,875	2,543,682
1826	2,411.461	224,183	2,635,644
1027	*2,181,138	279,362	2,460,500
1828	2,193,300	324,891	2,518,191
1829	2,199,959	317,041	2,517,000
1830	2,201,592	330,227	2,531,819
1831	2,224,356	357,608	2,581,964
1832	2,261,860	356,208	2,618,068
1833	2,271,301	363,276	2,634.577
1834	2,312,355	403,745	2,716,100
1835	2,360,303	423,458	2,783,761
1836	2,349,749	442,897	2,792,646
1837	2,333,521	457,497	2,791,018
1838	2,420,759	469,842	2,890,601
1839	2,401,346	497,798	2,899,144
1840	2,584,408	543,276	3,127,684
1841	2,935,399	577,081	3,512,480
1842	3,041,420	578.430	3.619,850
1843	3,007,581	580,806	3,588,387
1844	3,044,392	592,839	3,637,231
1845	3,123,180	590,881	3,714,061
1846	3,199,785	617,327	†3,817,112

*A new Registry Act passed, under which owners were obliged to register their ships anew. Many vessels, previously lost, had been continued up to this time on the registry, no evidence of their loss having been produced.

† Increase in 1846 over 1821, 1,256,909 tons.

Comparative view of Tonnage, English and Foreign, Inwards and Outwards.—No. 64.

A Statement of the Tonnage, distinguishing British from Foreign, that entered Inwards and cleared Outwards, from ports in the United Kingdom, in each of the years 1814, 1824, and 1846; showing the actual and the per-centage rates of increase between those periods.

	ENTERED.			CLEARED.			TOTAL.		
—	British.	Foreign.	Total.	British.	Foreign.	Total	British.	Foreign.	Total.
1814	1,296,248	599,287	1,889,535	1,271,952	602,941	1,874,893	2,562,200	1,202,228	3,764,428
1824	1,797,320	759,441	2,556,761	1,657,533	746,707	2,404,240	3,454,853	1,506,148	4,961.001
1846	4,294,733	1,806,282	6,101,015	4,393,415	1,921,156	6,314,571	8,688,148	3,727,438	12,415,586

		Tons.			
Increase from 1814 to 1824	British	892,653	or	34·83	per cent.
,, ,, ...	Foreign......	303,920	or	25·27	,,
	TOTAL....	1,196,573	or	31·78	,,
Increase from 1824 to 1846	British	5,233,295	or	148·84	,,
,, ,, ...	Foreign......	2.221,290	or	151·47	,,
	TOTAL....	7,454,585	or	150·26	,,
Increase from 1814 to 1846	British	6,125,948	or	239·08	,,
,, ,, ...	Foreign......	2,525,210	or	210·04	,,
	TOTAL ...	8,651,158	or	229·81	,,

Contrast of British Trade with Ports protected and those not protected –No. 65.

On the 1st of July, 1847, the following statement of the Tonnage of British ships that entered the ports of the United Kingdom from different Foreign countries and British possessions, in each of the years 1824 and 1846; distinguishing the Tonnage employed in the trade with British possessions, and which is protected by the Navigation Laws, from the Tonnage employed in the trade with Foreign countries, and which is unprotected from competition with Foreign ships, was given to the Committee on Navigation Laws, by Mr. G. R. Porter:—

Protected Trade.	1824.	1846.	Unprotected Trade.	1824.	1846.
Coast of Africa and Cape of Good Hope	20,742	52,173	Russia	239,185	452,438
			Sweden	17,074	12,625
			Norway	11,419	3,313
St. Helena & Ascension	477	709	Denmark	6,738	9,531
			Prussia	94 664	63,425
Mauritius	2,197	34,846	Germany	67,345	206,201
			United Netherlands	68,285	11.274,067
British India	48,666	207,991			B.168.968
			France	82,650	556,821
British North American Colonies	427,832	1,076,162*	Portugal, Azores, and Madeira	58 043	74,761
			Spain	45,723	65,719
Australian Colonies	4,073	39,129	Italy	40,793	98,868
			Gibraltar	5,454	14,523
British West Indies	244,971	183,742	Malta	3 324	8,176
			Turkey, Morea, Egypt	23,269	97,071
Fisheries	45,925	15,191	Tripoli, Barbary, and Morocco	1,174	
			China	28,570	53,593
			Sumatra Java, &c.	5,075	8,526
Jersey, Guernsey, &c.	98,214	125,961	Foreign West Indies	9,566	62,240
			U.S. of America	44,994	205,123
			Mexico and States of South America	46,787	170,611
			Ionian Islands	6,391	11,570
			Cape Verde Islands	..	168
			South Sea Islands	..	531
	893,097	1,735,924		904,223	2,558,809

Increase, 842,827 tons, or 94·37 pr cent. Increase, 1,654 586 tons. or 182·98 pr cnt.

* The duty on colonial timber was reduced to 1s. per load, 10th Oct., 1842.

In that year the tonnage entered from the British North American Colonies was 541,451 tons; in 1843, 771,905 tons; in 1844, 789,410 tons; in 1845, 1,090,224 tons.

If the tonnage entered from these colonies had remained as it was in 1842, the increase in the protected trades would have amounted, in 1846, as compared with 1824, to 308,116 tons, or 34½ per cent.

British and Foreign Tonnage from 1820 to 1846.—No. 66.

The Committee on Navigation Laws report the following statement of the Tonnage of vessels, distinguishing British from Foreign, and showing the proportions of each that Entered and Cleared from ports in the United Kingdom, in each year from 1820 to 1846, from Mr. G. R. Porter, 1st July, 1847.

Years.	Entered.					Cleared.					Total.				
	British.	Foreign	Total.	Centesimal Proportions.		British.	Foreign	Total.	Centesimal Proportions.		British.	Foreign	Total.	Centesimal Proportions.	
	Tons.	Tons.	Tons.	Brit.	For.	Tons.	Tons.	Tons.	Brit.	For.	Tons.	Tons.	Tons.	Brit.	For.
1820	1,668,060	447,611	2,115,671	78·84	21·16	1,549,508	433,328	1,982,836	78·14	21·86	3,217,568	880,939	4,098,507	78·50	21·50
1821	1,599,274	396,256	1,995,530	80·14	19 86	1,488,644	383,786	1,872,430	79.50	20·50	3,087,918	780.042	3,867,960	79·83	20·17
1822	1,664,186	469,151	2,133,337	78·	22·	1,539,260	457,542	1,996,802	77·08	22·92	3,203,446	926,693	4,130,139	77·56	22·44
1823	1,740,859	582,996	2,323,855	74·91	25 09	1,546,976	563,571	2.110.547	73·29	26·71	3,287,835	1,146,567	4,434,402	74·14	25·86
1824	1,797,320	759,441	2,556,761	70·29	29·71	1,657,533	746,707	2,404,240	68·94	31·06	3,454,853	1,506,148	4,961,001	69·64	30·36
1825	2,144,598	958,132	3,102,730	69·12	30·88	1,793.994	905,520	2,699,514	66·45	33·55	3,938,592	1,863,652	5,802,244	67·88	32·12
1826	1,950,630	694,116	2,644,746	73·75	26·25	2,737,425	692,440	2,429,865	71·50	28·50	3,688,055	1,386,556	5,074,611	72·67	27·33
1827	2,086,998	751,864	2,839,762	73·48	26·52	767,821	2,655,503	71·08	28·92	3,974,580	1,519.685	5,494,265	72·34	27·66	
1828	2,094,357	634,620	2,728,977	76·74	23·26	2,006,397	608,118	2,614,515	76 74	23·26	4,100,754	1,242,738	5,343,492	76·74	23·26
1829	2,184,525	710,303	2,894,828	75·46	24·54	2,063,179	730,250	2,793,429	73·85	26·15	4,247,704	1,440,553	5,688,257	74·67	25.33
1830	2,180,042	758,828	2,938,870	74·17	25·83	2,102,147	758,368	2,860,515	73·48	26·52	4,282,189	1,517,196	5,799,385	73·84	26·16
1831	2,367,322	874,605	3,241,927	73·02	26·98	2,300,731	896,051	3,196,782	71·97	28·03	4,668,053	1,774,656	6,442,709	72·61	27·39
1832	2,185,980	639,979	2,825,959	77·35	22·65	2.229,269	651,223	2.880,492	77·38	22·62	4,415,249	1,291,202	5,706,451	77·37	22·63
1833	2,183,814	762,085	2,945,899	74·13	25·87	2,244,274	758,601	3,002,875	74·72	25·28	4,428,088	1,520,686	5,948,774	74·43	25·57
1834	2,298,263	833,905	3,132,168	73·37	26·63	2,296,325	852,827	3,149,152	72·91	27·09	4,594,588	1,686,732	6,281,320	73·14	26·86
1835	2,442,734	866,990	3,309,724	73·77	26·23	2,419,941	905,270	3,325,211	72·77	27·33	4,862,675	1,772,260	6,634,935	73·29	26·71
1836	2,505,473	988,899	3,494,372	71·70	28·30	2,531,577	1,035,120	3,566,697	70·97	29·03	5,037,050	2,024,019	7,061,069	71·33	28·67
1837	2,617,166	1,005,940	3,623,106	72 23	27·77	2,547,227	1,036,738	3,583,965	71·07	28·93	5,164,393	2,042,678	7,207,071	71·65	28·35
1838	2,785,387	1,211,660	3,997,047	69·68	30·32	2,876,236	1,222,803	4,099,039	70·17	29·83	5,661,623	2,434,463	8,096,086	69·93	30·07
1839	3,101,650	1,331,365	4,433,015	69 96	30·04	3,096,611	1,398,096	4,494,707	68·89	31·11	6,198,261	2,729,461	8,927,721	69·42	30·58
1840	3,197,501	1,460,294	4,657,795	68·65	31.35	3,292,981	1,488 888	4,781,872	68·86	31·14	6,490,485	2,949,182	9.439.667	68·75	31·25
1841	3,361,211	1,291,165	4,652,376	72·24	27·76	3,429,279	1,336,892	4,766,171	71·95	28·05	6,790,490	2,628,057	9,418,547	72·09	27·91
1842	3,294,725	1,205,303	4,500,028	73·21	26·79	3,375,270	1,252,176	4,627,446	72 94	27·06	6,669,995	2,457,479	9,127,474	73·07	26.93
1843	3,545,346	1,301,950	4,847,296	73·14	26 86	3,635,833	1,341,433	4,977,266	73·04	26·96	7,181,179	2,643 383	9 824,562	73·09	26·91
1844	3,647,463	1,402 138	5,049,601	72·23	27·77	3,852,822	1,444,346	5,297,168	72.73	27·27	7,500,285	2,846,484	10,346,769	72·49	27·51
1845	4,310,639	1,735,079	6,045,718	71·30	28·70	4,235,151	1,796,136	6,031,587	70·22	29·78	8,546,090	3,531,215	12,077,305	70·76	29·24
1846	4,294,733	1,806,282	6,101,015	70.39	29·61	4,393,415	1 921,156	6,314,571	69·57	30·43	8,688,148	3,727,438	12,415,586	69·97	30·03

Tonnage Entering the Ports of France from 1825 to 1844.—No. 67.

The following table, given by Mr. G. R. Porter to the Committee on Navigation Laws, 1st July, 1847, shows the Number and Tonnage of French and Foreign vessels that entered the ports of France in each year, from 1825 to 1844, and also the centesimal proportions of French to Foreign Tonnage.

	FRENCH.		FOREIGN.		TOTAL.		Centesimal Proportion.	
	Ships	Tons.	Ships.	Tons.	Ships.	Tons.	French	Forgn.
1825	3,387	329,735	4,218	414,670	7,605	744,405	44·29	55·71
1826	3,440	355,776	4,910	543,682	8,350	899,458	39·55	60·45
1827	3,350	353,102	4,439	475,509	7,789	828,611	42·61	57·39
1828	3,465	346,591	4,728	527,639	8,193	874,230	39·64	60·36
1829	3,048	331,049	5,070	581,755	8,118	912,804	36·27	63·73
1830	3,236	340,171	5,169	669,283	8,405	1,009,454	33·70	66·30
1831	3,375	333,216	3,951	461,194	7,326	794,410	41·94	58·06
1832	4,290	399,948	5,651	714,638	9,941	1,114,586	35·88	64·12
1833	3,561	358,157	5,115	622,735	8,676	980,892	36·51	63·49
1834	3,965	394,486	6,124	736,918	10,089	1,131,404	34·87	65·13
1835	4,001	407,999	6,360	766,033	10,361	1,174,032	34·75	65·25
1836	4,692	484,986	7,099	889,345	11,791	1,374,331	35·29	64·71
1837	5,273	584,451	7,127	910,129	12,400	1,494,580	39·10	60·90
1838	6,081	657,084	8,006	1,014,740	14,087	1,671,824	39·33	60 67
1839	6,955	705,756	7,822	979,324	14,777	1,685,080	41·88	58·12
1840	6,764	665,178	8,676	1,076,737	15,440	1,741,915	38·18	61·82
1841	6,030	630,071	9,244	1,193,289	15,274	1,823,360	34·55	65·45
1842	5,712	610,265	10,372	1,353,261	16,084	1,963 526	31 08	68·92
1843	6,106	639,637	10,305	1,376,260	16,411	2,015,897	31·70	68·30
1844	6,392	679,066	10,070	1,357,789	16,462	2,036,855	33·34	66·66

Value of Railway Scrip in 1845 and 1846—No. 68.

The *Railway Record* of the 31st October, 1846, states that the difference in the market value of Railway Stock, between the 1st of September, 1845, and the 1st of April, 1846, is estimated upon scrip shares alone at £60,000,000 sterling! There is no instance upon record of a corresponding depreciation of property to the same extent within the same time.

Railways in 1845 too anxious to obtain the favour of the Board of Trade.—No. 69.

It may be worth while to record the voluntary offer made by the Manchester and Leeds Company to the Board of Trade in 1845, if their scheme for the West Riding lines was sanctioned in its integrity :—

"To subject the whole of the existing Manchester and Leeds Railway, as well as the West Riding Railway, and all lines which parliament may hereafter allow to be constructed by or amalgamated with the Manchester and Leeds Railway Company, to the following provisions :—

"1. The option of purchase and revision, as contained in the general act of last session : the latter option, however, to accrue *immediately* on the profits reaching 10 per cent.

"2. A revised tariff of *maximum* charges lower than those nsually enforced, viz.—

"First class passengers by ordinary trains, 2½d. per mile.

"Second class carriages to be closed, and provided with glass windows.

"Third class passengers 1d. per mile, in carriages provided with seats, and covered, by *three* mixed trains at least each way per day, at the ordinary speed.

"Coals, salt, lime, &c., 1d. per ton per mile, including locomotive power.

"Corn, flour, timber, &c., 2d. per ton per mile.

"Cotton, cotton twist, wool, metals, &c., 3d. per ton per mile.

"Manufactured goods, &c., 4d. per ton per mile.

"An uniform parcel rate, including delivery within one mile of railway station :—

	s.	d.
Up to 14 lbs.	1	0
,, 28 lbs.	2	0
,, 56 lbs.	2	6

"3. That clauses shall be inserted in their act binding them to submit to the decision of the Board of Trade, or other authority constituted by parliament for that purpose, all questions of difference with other companies by which the public convenience is affected.

"4. That ample security for a due share of local management in the direction both of the West Riding and Manchester and Leeds Companies shall be provided by the act.

"5. And, finally, the company pledge themselves to do all in their power to carry out such arrangements as will be most conducive to the comfort and convenience of the public, and to attend to any reasonable suggestions that may be made to them at any time hereafter with this view."

Manchester and Neighbourhood.—No. 70.

The following remarks are extracted from the report of the Board of Trade in 1845, on railway communication in Lancashire :—

"Within a circle of 15 or 20 miles radius round Manchester, a population of upwards of a million and a half are concentrated, who are almost without exception either actively engaged in, or directly dependent upon, the great staple manufacture of cotton. The whole of this district may, in fact, be considered as one vast workshop, where production is constantly going forward on a scale hitherto unparalleled in the history of human industry.

"The immense importation of cotton wool, which in the year 1844 reached the amount of 646,874,816 lbs., is principally consumed in this district, where, by the aid of machinery, it is spun, woven, bleached, printed, and in an incredibly short time again exported to all parts of the world.

"The exports of cotton manufactures during the year 1843, reached the following amounts, viz.:—

	Yards.	Declared Value.
		£
White or plain cottons	562,575,205	8,024,287
Printed or dyed cottons	356,065,060	7,144,177
Hosiery and small wares	.....	1,085,536
Twist and yarn.....lbs.	140,321,176	7,193,971
	£	23,447,971

of which by far the larger portion is furnished by the great Lancashire district."

Transhippiag Goods at Gloucester.—No. 71.

In 1845, during the gauge contest, the evil of transhipping goods at Gloucester was thus reported to the Board of Trade by Mr. Wyndham Harding. I could give from my own observations a stronger illustration of the delays, damages, and losses that occurred there in 1844 and 1845, but think the following sufficient:—

"Up to this day a great number of waggons laden with goods of all descriptions have been lying at Gloucester, which we have been unable to remove in spite of every exertion. We keep an establishment of clerks and porters to superintend and effect the transhipment, but, in the hurry of business, mistakes occur; goods destined for Hull are perhaps put into the Manchester truck; boxes are bruised, packing torn, furniture and brittle articles damaged. There is the chance of mistake in the re-invoicing of goods; the other day, for instance, a bale for Bristol was laid hold of by a carrier at Gloucester and taken to Brecon, a claim for some 30*l.* being instantly made upon us.

"In short, all the inconvenience, delay, and expense attending an unloading and reloading of goods have to be encountered, and there is nothing the senders of goods so much dread as this. The expense involved is very considerable: there is the expense of porterage, which varies from 3d. to 6d. per ton; the expense of clerks employed in inspecting and invoicing the goods; the expense of shunting the waggons, the waste of premises, the additional carrying stock it obliges the companies on each gauge to maintain; and, above all, the loss of trade which is sure to result from the delay and risk attending the change, and the advantage which uninterrupted communications, whether by water or railway, are sure to have over you in competition."

Water conveyed by Railway.—No. 72.

In the Railway Times, 18th September, 1847, is the following remarks:—

"Trains of Water, conveyed in Engine Tenders, are now running up the Midland Railway, from Derby to Leicester, in consequence of the shortness of the supply at the latter station."

Merchandise Traffic on the Norfolk Railway.—No.73.

The following shews the Traffic on this Railway from each Station to the Junction with the Eastern Counties Railway at Brandon, and also the Local Traffic, in one sum, from all the intermediate Stations, for six months ending 4th July, 1847.

Station.	MERCHANDISE.							CATTLE.					
	Weight.				Amount.			Bullocks	Sheep.	Pigs.	Amount.		
	Tons	cwt.	qrs.	lb	£	s.	d.				£	s.	d.
Yarmouth	5,030	9	3	4	2,340	8	7	2167	1924	46	459	12	10
Lowestoft	116	14	3	6	66	6	10	4	..	..	0	15	6
Reedham	139	15	3	8	47	10	0	1818	1639	17	362	13	0
Norwich	9,304	14	0	8	2,650	19	0	124	100	..	16	4	9
Trowse	760	17	2	0	162	16	6	18,986	21,248	4826	2,960	19	9
Hardingham	83	1	2	4	19	2	1	8	120	..	3	2	5
Dereham	2,071	3	0	3	548	9	8	2883	8358	228	567	1	0
Windham	1,261	4	3	15	201	17	10	2348	5184	136	315	18	7
Spooner Row....	8	6	0	21	1	3	5	..	..	..	....		
Attleboro'	2,889	7	2	17	411	14	2	1673	1647	91	151	8	7
Eccles	160	18	2	24	22	0	8	111	267	50	10	0	1
Harling	225	0	3	3	27	4	11	49	..	..	1	17	6
Thetford	2,499	12	0	14	157	14	1	478	1122	17	13	7	7
Through	24,511	7	0	7	6,657	7	9	30,649	41,609	5411	4,862	11	7
Local	43,350	9	1	17	5,980	10	6	993	6326	498	157	17	11
Total	67,861	16	1	24	12,637	18	3	31,642	47,935	5909	5,020	9	6

Merchandise Traffic on the Leeds and Bradford Railway.—No. 74.

Return of the Weight, Earnings, &c., of the Leeds and Bradford Railway, from January 1st to 30th June, 1847.

CARRIERS' TRAFFIC.

First Class.						Second Class.						Third Class.					
Weight.	Miles.	Rate.	Amount.			Weight.	Miles.	Rate.	Amount.			Weight.	Miles.	Rate.	Amount.		
T.		d.	£	s.	d.	T.		d.	£	s.	d.	T.		d.	£	s.	d.
639	8946	4	149	2	0	4686	65604	3	820	1	0	466	6524	2	54	7	4

Miscellaneous Goods conveyed by the Company as Carriers.

Tons 25,210. Miles 312,919. 1½d. ℔ Mile. £1955 15s. 0d.

MINERALS.

Tons 4,042. Miles 29,840. 1½d. ℔ Mile. £186 10s 0d.

Live Stock Traffic on the Grand Junction Railway from Liverpool.—No. 75.

	Cattle.		Pigs.		Sheep.		Amount.		
Year	Wagons	Quantity.	Wagons	Quantity.	Wagons	Quantity.	£	s.	d.
1839	8	43	2,581	57,452	..	..	7,806	1	6
1840	..	..	2,524	65,039	..	..	7,210	2	6
1841	75	322	3,342	66,098	..	..	8,968	13	5
1842	665	4,086	4,313	97,638	..	..	12,864	12	4
1843	765	7,197	5,842	142,241	..	..	17,475	17	6
1844	784	6,799	5,116	131,822	..	..	15,440	2	0
1845	2,663	23,682	9,730	233,521	1,607	55,276	27,215	17	0
1846	5,736	53,586	11,302	327,297	2,510	104,162	36,183	18	4

A Deserter's escape from a Railway Train.—No. 76.

On the 6th October, 1845, a deserter from the 26th regiment, in the custody of two soldiers, in coming from Glasgow by railway, made his escape from the train while proceeding at the rate of twenty-five miles an hour; after a lapse of ten minutes the train was stopped, but all trace of the prisoner was lost.

Female Speaker at a Railway Meeting.—No. 77.

At a meeting of the Bristol and Exeter Railway, held, I believe, at Bristol, about 1846, at which the proprietors were divided in opinion, whether to ratify or break off their agreement with the Great Western Railway. Mr. Sillifant, a proprietor, who had advised the Meeting to keep their agreement with the Great Western, said :—

"Mr. Chairman, I beg to move a resolution in accordance with your proposition.

"Mrs. Coote, a Lady who sat in a distant part of the room, here cried out, in a shrill treble key—'I say, no, no, no.' (Great laughter and cries of Bravo!)

"Mr. Brillain—All Mr. Brunel's sympathies, all his attachments, and all his interests and feelings are wound up with the Great Western Company, how then can he be expected to act an impartial part towards us?

"Mrs. Coote—Oh! have nothing to do with him—have nothing to do with him. (Great laughter.) He laid out a deal more money on this line than he ought. (Renewed laughter)

"Mr. Seacombe—The value of this line has been greatly overrated the Chairman and others have recently made speeches expressive of, their favourable opinion of it.

"The Chairman—There must be some mistake. I did not speak on that occasion.

"Mrs. Coote—Oh! no matter, *Somebody said it.* (Shouts of laughter.)"

Parliamentary interference with Railways, often injurious.—No. 78.

The Chairman of the Edinburgh and Glasgow Railway stated at a meeting, 14th September, 1847—"The new works had not gone on as they could have wished, but really none of their people were to blame, because they were, by Act of Parliament, tied to a particular architect for the sake of the beauty of Edinburgh."

Directors in their private and public capacity.

No. 79.

There are some things done by a Board of Directors that they would not like to do in their individual capacity, and the following is an illustration :—

Mr. Thomas Banks, engineer, Manchester, some three or four years since, had occasion to attend a Board of Directors of the Midland Railway Company, at Derby, on the subject of his patent right to steel tires and wheels, when the directors wanted Mr. Banks to cancel his former agreement with them, and, on his hesitating, they said—"You seem afraid to trust us!" to which Mr. Banks replied, "Oh, no, I am not afraid to trust you as private gentlemen, but when you get altogether in this room, I'll trust none of you."

Good Working of the Eastern Counties Railway.

No. 80.

Mr. Hudson stated as follows, at a meeting of the Eastern Counties Company on the 12th August, 1847 :—

"Gentlemen, if we wanted any testimony to the mode in which our arrangements now work, it would be found in the late visit of her Majesty to Cambridge. I believe that on no line has her Majesty travelled more comfortably, or more securely, or has better enjoyed a trip. But not only have we the testimony of her Majesty, but we have a vote in our favour from the Town Council of Cambridge—a body which hitherto has not been remarkable for its attachment to the Eastern Counties Railway. And yet, in a full meeting of all, or nearly all the members, the following resolution was passed :—'That the thanks of this Council are eminently due to the Eastern Counties Railway Company, for the excellent arrangements afforded by them for the accommodation of the visitors and inhabitants of the town during her Majesty's and Prince Albert's recent visit; especially for the conveyance of the band of the Sappers and Miners to and fro between Woolwich and Cambridge.' Gentlemen, I have a great respect, as you all know, for Corporations. And the testimony of a Corporation so ancient and so enlightened as that of Cambridge, cannot but be very gratifying to our feelings."

Post-office Act of 1847 and Railway Parcels.—No. 81.

At a meeting of the York and North Midland Company, 9th August, 1847, Mr. Hudson said :—

"I do take some shame to myself upon this subject, but I asked the Chancellor of the Exchequer as to the provisions of this Act, and he told me that the object was merely to compel parties to pre-pay their letters. To my great astonishment, however, I have since learned that the powers taken in this Act are not those which I am sure the Legislature contemplated, but it was smuggled through in the manner in which Acts of Parliament usually are during the last few days of the session. Mr. Henley and I protested against the Bill, when the Chancellor of the Exchequer said, 'Oh, it is merely an Act to compel parties to pre-pay their letters.' If such a system as this is to be pursued, it behoves Railway Companies to take proper measures; and, rely upon it, if any invasion be attempted, such as is contained in the powers of this Act, we shall, having justice on our side, be able to obtain satisfaction on that head. I don't think the Legislature contemplated such a measure, and it shows how necessary it is to look scrupulously and closely to every Act of Parliament. I don't believe that Government will take advantage in this case, for I have that opinion of their honour and integrity, that they will do nothing unfair or unjust towards the railway interest."

Cost of Working a Ship.—No. 82.

In the evidence of Mr. W. Phillipps, before the Committee on the Navigation Laws, 22nd June, 1847, the following cost, per month, for a crew of 13 men, was given :

Hamburgh Ship.

	£	s	d.
Captain	7	10	0
Mate	2	16	5
Second Mate	2	2	4
Carpenter	2	2	4
Cook	1	15	3
Four Able Seamen	5	12	11
Two Ordinary ditto	2	2	4
Two Apprentices	1	1	3
	£25	2	10

British Ship.

	£	s.	d.
Captain	10	0	0
Mate	5	0	0
Second Mate	4	0	0
Carpenter	4	0	0
Cook	2	10	0
Four Able Seamen, 50s.	10	0	0
Two Ordinary ditto	3	10	0
Two Apprentices	1	10	0
	£40	10	0

Coal consumed by Steamers from Liverpool.—No. 83.

The following shews the quantity of Coal consumed by Steamers sailing from the port of Liverpool in 1844:—

Statement of COAL supplied to Steamers out of Liverpool, received by Flats from St. Helens.

	Tons.
Government Mail Boats, all supplied from Liverpool	14,000
City of Dublin Steam Packet Co., punctually supplied from Liverpool (part Kilkenny Black Coal)	32,000
Drogheda Co. take coals from Liverpool as ballast, and sell it	18,000
Glasgow Co.'s about one-half from Liverpool (200 tons ℔ week)	11,000
Belfast Boats (Langtry and Co.)	5,200
"Troubadour," Bristol Boat	1,000
"Nimrod," Cork	1,000
"Windermere," Ulverstone	1,000
Beaumaris and Isle of Man	1,500
Dumfries Boats	1,000
Dundalk	4,000
"Countess of Galway,"	1,500
"Duchess of Lancaster,"	1,000
Londonderry Boats	6,000
Newry Boats	1,000
Wexford	1,000
Carlisle	3,500
Coleraine	3,000
Sundry others consumption, average for Ferries annually,	3,300
Total St. Helens Coal	110,000
Welsh Coal supplied to the Halifax Boats, averages 20 trips, 600 tons ℔ trip	12,000

Manchester and Birmingham Railway.—No. 84.

At a meeting of this Company, on the 5th September, 1845, Mr. W. Rawson stated:—

"I have no earthly doubt about our paying ten per cent. on all the money expended, and upon the calls to be made of £24 more: but let me tell you, sir, that we are going to make a number of branches;

because we should not stand still, if the directors do. The dissentient shareholders, or rather their committee, are determined to begin business on their own account, and I find that the gentlemen of our committee own more than one-third of the whole Manchester and Birmingham railway; therefore I think you will agree with me that it is no visionary matter I speak of, when I say that we shall extend our line from only three points. We shall start from Macclesfield and make a branch to Lichfield, along the old Churnet Valley,—we shall go from Crewe in any direction we can find; and we shall go from Altrincham to Birkenhead and Chester, because we are the right parties to make that line, and if our directors wont do anything,—if that be so, then we must do business on our own account. I dont think I can better explain my views."

Objections to the Extension of Railways in 1846.

No. 85.

The following is the prayer of a memorial from the Manchester Chamber of Commerce to the Board of Trade, dated 28th July, 1846:—

"Considering, therefore, that Parliament has granted Railway Bills throughout the session without reference to the agregate amount of capital which it thereby authorised directors to collect together, and which could not be so collected by individual agency—seeing that, at the close of its labours, Parliament has sanctioned a transfer from floating to fixed capital of an amount which it is impossible for the country to supply—believing that many of the projects, the Bills for which have been pushed to completion, cannot be carried out, and that the subscribers to them would now be most gladly relieved from their responsibilities—and foreseeing great misery and loss of employment in the manufacturing districts, your memorialists urgently pray that, before the present session expire, your lordships may cause a general measure to be proposed, which shall apply to all the Bills passed; which shall have the effect of fully testing the power of the subscribers to each individual project, to carry out the objects proposed; which shall grant facilities to companies to dissolve themselves; and which shall, in every case, limit the power of directors to make calls, under such provisions as your lordships may consider least prejudicial to the general interests or within the probable power of the country to supply."

Stockport Viaduct.—No. 86.

This splendid structure, on the London and North Western Railway, is 1783 feet in length, and is carried on 26 arches, 22 of which have a span of 63 feet. Its length, however, is not its most remarkable feature, but the great height at which the traveller is securely and rapidly carried across the valley below. The height of the parapet above the river is 111 feet, and the rails are about 120 feet above the foundations of the arches. From the top is obtained one of the most favourable views in England of a manufacturing town. The foundation-stone of this gigantic undertaking was laid on the 10th of March, 1839, and the whole was completed 21st December, 1840, although it was not until the 16th July, 1841, that the first engine and train passed over it. In height it exceeds the Menai Bridge by four feet. The quantity of stone used in its erection was above 400,000 cubic feet, and the bricks exceeded 11,000,000. For the information of the curious, it may be stated that such an amount of bricks, if laid endways, would describe a distance of 1562½ miles; so arranged they would reach from London to Ispahan, in Persia; from London to Cairo, in Egypt, or from the English metropolis to beyond Morocco, in Africa, and they would exceed the whole length of the immense Mongolia wall which bounds the Chinese dominions on the north, and would considerably more than reach across the Celestial empire; they would be about five times the length of Ireland, or ten times the length of the largest county in England, which is Yorkshire. The cost of its erection was upwards of £70,000.

Engineer, Mr. G. W. Buck; Builders, John Tomkinson, Samuel Holme, and James Holme.

Statistics of Russia.—No. 87.

According to the Almanac published for the year 1848, by the Academy of St. Petersburg, European Russia comprises a surface of 90,117 square miles, with a population of 54,092,000 souls; the Kingdom of Poland, an extent of 2,320 square miles, with 4,850,000 inhabitants; and the Grand Duchy of Finland, 6,844 square miles, and 1,547,702 inhabitants. According to the last census, St. Petersburg possessed a population of 443,000. In 1846, 1,677 pouds of gold, (the poud is 40lb.,) 1 poud of platina, and 1,190 pouds of silver were extracted from the mines of the empire. The public debt is estimated at 315,084,200 silver roubles (a rouble is 4f. 25c.). Bills of credit are in circulation to the amount of 226,167,589 silver roubles, and *assignats* of the empire to that of 117,122,220 silver roubles.

Carriers.—No. 88.

The Carriers, on both Railways and Canals, have evidently been on the decrease since the memorable fight between the Grand Junction Railway and Messrs. Pickford and Co.—The Report of the Manchester, Sheffield, and Lincolnshire Railway, 18th August, 1847, states :—

"And finally, the directors announce, that they have considered it the interest of the Company to become carriers on their own account upon their line, and that they have made all necessary arrangements for the purpose. They anticipate from the adoption of this system great advantage."

and the Report of the Navigation Branch (Trent and Mersey Canal) of the North Staffordshire Railway, read at the meeting on the 5th July, 1847, says :—

"They have also authorised the equipment of some boats on account of the Company as carriers; and your commitee have reason to believe that this arrangement will be the means of inducing the carriers to make a considerable reduction in their freights. Your committee take this opportunity of pointing out to the Board that the tonnage dues of the navigation cannot be maintained in competition with railways, while the freightage of goods on the canal is exclusively in the hands of common carriers; the profits obtained on freights being the principal element at present in the cost of canal conveyance—

and it appears they fear the Company do not get the correct weight declared by the Carriers, for they state—

"Your committee have introduced a very stringent system of indexing, and also of gauging all boats both by night and by day, throughout the extent of the canal; and they have further determined on making indexing docks at the termini of the canal."

Liverpool Docks.—No. 89.

A comparative statement of the Rates and Duties received in the years ending the 24th of June, 1846 and 1847.

Year.	Duties on Tonnage.	Duties on Goods.	Lighthouse Duties.	Floating Light Duties.	Graving Dock Duties.	Graving Block Duties.	Extra Dock Rent.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1847..	127982 14 1	116453 0 6	9,712 1 3	4,231 1 6	12,375 11 0	2,258 5 6	699 1 8	273,711 15 6
1846..	114709 15 8	98714 0 6	8,732 15 2	3,775 15 1	12,338 4 0	2,308 12 6	483 13 6	241,062 16 5
Increase	13272 18 5	17739 0 0	979 6 1	455 6 5	37 7 0	.....	215 8 2	32,648 19 1
Decrease	.....	.....	.....	.....	.....	50 7 0	.....	.....

Year.	Number of Vessels.	Tonnage.
1847..	20,889	3,351,539
1846..	19,951	3,096,444
Increase	938	255,095

Dock-office, Liverpool, June 24th, 1847.

GEORGE WITHERS, Treasurer.

The total sum of £273,711 15s. 6d. is for duties alone. There are other items not included in this statement, which are looked upon as sources of income; these, when added to the above, will make the total income of the Dock Estate this year upwards of £280,000

Hint to Public Speakers.—No. 90.

At a meeting in Manchester, on the subject of railways, 30th September, 1847, Mr. William Rawson said:—

"It is not often that I have the opportunity of speaking upon subjects which I understand, and you know that men generally break down when they attempt to speak upon matters they do not understand,—I have lived now for fourteen years in this district, and I have seen the effects produced by circumstances upon your trade and commerce; but the misfortune is that you will not wait after one o'clock to hear any speaker, whatever he may have to say, or however important the discussion may be to your interests."

Electric Telegraph in England, in 1847.—No. 91.

The following was stated to be the mileage of Electric Telegraph completed and in operation, on the several English Railways, in June, 1847:—

	Miles.
Eastern Counties (both lines)	180
Eastern Union	17
Norfolk	58
Midland	210
Great North of England	54
Newcastle and Darlington	55
Great Western	19
South Eastern	152
South Western	99
Blackwall	5
South Devon	20
Wolverton and Peterborough	57
Hull and Selby	41
York and North Midland	23
York and Scarborough	43
Sheffield and Manchester	3
Preston and Wyre	20
	1056

Long Boiler Engines not safe at great velocity.

No. 92.

At the coroner's inquest on John Gregory, the driver of No. 40 engine, which ran off the rails on the Chichester and Portsmouth railway, 31st May, 1847, the following remarks were made by the Government inspector :—

Captain Coddington was then examined by Mr. Powell, the town-clerk of Chichester.—"My attention has been directed to this particular class of engine, and the result of my examination is that it is more subject than other engines to a jumping motion. The reason is the overhanging weight at either extremity.

Mr. Powell.—"Are you aware of any advantages possessed by this class of engine to counterbalance the disadvantages you have named?

Captain Coddington.—"I am not. I think that the advantages which it was expected would be derived from it have not been realised.

Mr. Powell.—"Then the safest travelling on railways is not by this class of engines?

Captain Coddington.—"The very safest travelling will be the very slowest. Up to a certain rate of speed I think these engines are as safe as any others. I think they are perfectly safe at thirty-five miles an hour. There is a certain degree of risk with every increase of speed, and some engines will bear an increase of speed better than others."

Speculation in 1825, 1835, and 1845.—No. 93.

The following is a digest of the Amounts of Capital proposed to be invested in Home and Foreign Speculation at the periods specified :—

	Home Schemes.	Foreign.	Total.	Paid up and Deposits.
	£	£	£	£
1824 and 1825	156,778,630	48,189,000	204,967,630	35,014,698
1834 to 1837	129,073,700	21,175,000	150,248,700	22,616,070
1844 and 1845	612,262,200	79,250,000	691,512,200	78,448,420

Transhipment of Goods an evil on Canals.—No. 94.

A report read at the North Staffordshire Railway meeting, 5th July, 1847, referring to the Trent and Mersey Canal, states:—

"1. That the transhipment of goods is an impediment to traffic, and that trade would be considerably increased by being carried without such transhipment between the Potteries and Liverpool.

"2. That great economy in the cost of conveyance would be effected by arrangements which would enable the company to carry directly between these places.

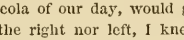
"The chairman of the company has reported to your committee, that, in pursuance of a resolution of the 14th January, he had caused a survey to be made of the canal between the Potteries and Preston Brook, and that the engineers had reported that an outlay of £80,000 would enable the company to convey the traffic between those places, in large boats capable of navigating the river Mersey, and that he had obtained the consent and co-operation of Mr. Loch, on the part of the Bridgewater trustees. To the Chairman, therefore, they beg to refer you for particulars, and they have only to recommend that the proposed scheme should be carried out without delay."

Peel's opinion of the Trent Valley Railway.—No. 95.

At the opening of the Trent Valley Railway, at Tamworth, on the 26th June, 1847, Sir Robert Peel made the following remarks:—

"About two thousand years ago the Romans found it necessary to open the great North Western line of road. The termini were London and Chester; the engineer, I apprehend, united in himself the functions of engineer and contractor, who was, in short, the Stephenson and Brassey of that time. He was no less a man than Julius Agricola. When he opened up his great north-western road he determined to take the direct line. The gradients were not very favourable; he used no tunnels, no cuttings, no embankments; he went through the valleys and up the hills, but he took the direct line; and his stations were not badly chosen. Coming from London he left Wolverton about a mile on his right hand; he came on to Weedon, passed between Hinckley and Nuneaton, through Atherstone to Fazeley,

within a mile of Tamworth, and then, going within a mile of Lichfield, went straightforward to Chester. Now I think that Mr. Stephenson and the directors of the North-Western and Trent Valley Railway, although they may have improved on the gradients of Julius Agricola, will admit that his line was a good one, and that his stations were well selected. This I felt confident of,—that if 2,000 years ago the direct line was preferred—if, when the North-Western terminus was a Roman encampment only—when the passenger-trains took probably nothing but a few recruits who belonged to the 20th Legion, then stationed at Chester, the direct line was preferred—I felt convinced that the time must shortly come when, in the nineteenth century, the North-Western terminus being Manchester, and Glasgow, and Liverpool, Dublin and the whole of the north and west of Ireland, the direct line would also be preferred. I felt sure that if the present engineer, the Julius Agricola of our day, would go on in his direct line, turning neither to the right nor left, I knew enough of Manchester men to be persuaded they would not long consent to go ten miles out of their way, although it gave them an opportunity of paying a compliment to the people of Birmingham."



Men of the North Speculators.—No. 96.

At a meeting held at Darimouth on the 5th of March, 1845, to promote a railway to connect Dartmouth, Brixham, Paignton, and Torquay, in Devonshire, a Mr. Whidborne expounded the merits of the scheme, but feared the "Devonions" would not avail themselves of the advantages, and there was a difficulty—

"T'was true, t'was pity—pity t'was, t'was true,"

but there was a quarter from which they might get the needful.

"As to the money," said the eloquent Mr. Whidborne, "it could not be raised in this neighbourhood, *but could be had from those gentlemen in the north who are so fond of speculating*, and were making their fortunes by so doing. In the present day, *such was the mania for railway speculations, that the shares would be soon taken up.*"

Quick Travelling by Sea.—No. 97.

The Spanish officer in charge of the mail from Gibraltar to Singapore, and back to England, left Gibraltar for Alexandria in the Oriental steamer, on the 26th of August, a distance of 1,828 miles; proceeded from Alexandria to Suez, 272 miles; from Suez to Ceylon, per Precursor, 3,459 miles; from Ceylon to Singapore, per Lady Mary Wood, 2,000 miles; and arrived at Singapore at 4 o'clock on October 8th, having travelled 7,559 miles. He then returned from Singapore to Galle, per Braganza, 2,000 miles; from Galle to Suez, per Hindostan 3,459 miles; from Suez to Alexandria, 272 miles; from Alexandria to Gibraltar, per Oriental, 1,828 miles; from Gibraltar to Southampton, per Oriental, 1,143 miles; and arrived at Southampton the 2nd of December, after having travelled 16,261 miles in 98 days; from which must be deducted 20 days for stopping to enjoy himself, watering and coaling, leaving 78 days. This gives an average of 208⅓ miles per day.—*Times*, 4th December, 1846.

Recipe for making Axle Grease for Railway Carriages.—No. 98.

Some mystery has been made on this subject, and patents taken out for various articles, but I believe, from experience, the following is the best:—

Take 56 or 60 pounds of soda, dissolve in about three gallons of water in a small boiler; when quite dissolved, to be poured into a large tub or wooden cooler containing from 30 to 36 gallons of cold water, and well mixed. Tallow to be melted (according to the proportions hereinafter stated) in a 60-gallon boiler After being thoroughly dissolved, Palm Oil is to be added, and then the mixture allowed to boil; as soon as it boils the fire to be taken out of the furnace, and the mixture to be cooled gradually, and to be frequently stirred while cooling. When cooled down to blood-heat (98 degrees) it is to be run off through a seive into the cooler containing the water and soda, and it must be stirred during the whole of the time it is running off in order that it may be properly mixed.

Proportions of Oil and Tallow.

Summer Weather.		*Winter Weather.*	
Palm Oil	1 cwt. 1 qr.	Palm Oil	1 cwt. 3 qr.
Tallow.....	1 „ 3 „	Tallow.....	1 „ 1 „

In open Weather (Spring or Autumn).

Palm Oil ..... 1 cwt. 2 qrs.
Tallow ..... 1 „ 2 „ } equal quantities.

Cost of Freight from America, &c.—No. 99.

Mr. W. Phillipps gave the following particulars to the Committee on Navigation Laws, on the 22nd June, 1847:

"I have the relative and average rates of freight on various articles. On sugar from the West Indies and Cuba it is £3 a ton, or equal to one-third of a penny per pound; the duty is 1½d. per pound, or 14s. per cwt. Now one-third of a penny a pound would never go into the pocket of the consumer; it could not; you could not decimate or fractionize your retail sales to bring it to anything like a benefit to the consumer. On tea, the average rate of freight has been £4 15s. per ton of 50 cubic feet, which is equal to 1 5-16ths of a penny per pound, and the duty is 2s. 2d. per pound. The average rate of freight upon tobacco from New Orleans has been 50s. per hogshead, or equal to 280-600ths of a penny per pound; from Virginia, 35s. per hogshead, or one-third of a penny per pound; the duty being 3s. per pound. I have taken flour at 4s. per barrel, which is more than the average rate of freight, but I put it at 4s., knowing that it had been lately sent from the United States at 4s. per barrel, that is equal to a farthing per pound. The freight upon indigo, at £4 15s. per ton of 50 cubic feet, is equal to 11-16ths of a penny per pound. The freight upon coffee, at £4 per ton, is equal to about one-third of a penny per pound; the duty on foreign being 6d., and on coffee from the British possessions 4d. per pound. On cotton, the average rate of freight for the last 10 years has been, from Bombay, £3 5s. 4d. per ton of 50 cubic feet, which is equal to 7-16ths of a penny per pound; from the United States, it has been 5-8ths of a penny per pound."

New mode of Propelling Boats on Canals.—No. 100.

The "Liverpool Mercury," of the 26th November, 1847, gives the following particulars:—

"A New Steam Boat for Canals.—A newly constructed steam apparatus, by Christie and Co., of London, is now working upon the Duke of Bridgewater's canal, between Runcorn and Preston Brook. It consists, first of all, of a simple barge, which carries the engine, but, of course, has no paddles. It propels itself, with whatever burden is attached to it, by means of a rope, one end of which is made

fast at Runcorn and the other at Preston Brook; there are two barrels fixed in the engine-boat, which are made to revolve round their centre-pieces by the power of the engine, and, as they go round, they wind up one end of the rope and let out the other, so that when the barge is at either of the above-mentioned places, one barrel is bare and the other filled with the coil. The rope that is loosed falls, by its own gravity, to the bottom of the canal, so that there is no obstruction offered to other vessels. Thus, when the boat has arrived at Preston Brook, the Runcorn barrel is uncoiled, and *vice versa* on its arrival at Runcorn. On Tuesday last, six loaded barges were attached to it, four of 40 tons burden, and two smaller boats, making altogether 205 tons burden, independently of the steam-boat, which it took to Preston Brook, about 5½ miles, in two hours. It seems fully to answer the expectations of the trustees, and it will enable them to clear the docks of the different carriage-barges, at a wonderful rate of despatch."

This appears to be the invention of Captain Beadon, of which a description was given in the "Mechanics' Magazine," vol. xlv., p. 255.

Cost of Three Railways.—No. 101.

The Board of Trade, in reporting on the London and York schemes in 1845, give the following statement:—

RAILWAYS.	Preliminary and incidental expenses, per mile.		Land and compensation, per mile.	Railway works and stations, per mile.	Carrying establishment, per mile.
	Parliamentary expenses.	Law charges, engineering, direction, &c.			
	£	£	£	£	£
London & Birmingham	650	1,500	6,300	38,280	3,000
Great Western	1,000	2,500	6,300	40,000	4,800
London and South Western	650	900	4,000	18,450	2,350

Railway Competition.—No. 102.

Mr. Glyn made the following remarks, on Competition, at a meeting of the London and North Western Railway, 13th August, 1847 :—

"Gentlemen, I can venture to predict what the consequences will be if competition is still to be carried on. We shall have two companies competing for the same amount of traffic from one point—we shall have two establishments kept up—two capitals employed—and we shall have only one receipt to be divided on these two capitals. And to what, gentlemen, must it inevitably come? In many cases, I doubt not that that which has now become a maxim will inevitably be the result, namely, that where combination is possible, competition is impossible. But, gentlemen, there is another result, and to this I wish to call the attention of proprietors and the public; competition may go on from contentions and rivalries among the companies themselves, and what will be the result? Why, the proprietors will interfere; they will force their directors to reduce the establishments of the contending companies to the lowest possible pitch. Trains will be taken off—servants will be discharged—and the whole of that machinery which ought to be kept up to the highest possible condition, will be deteriorated: and what then becomes of the public safety? Such, gentlemen, will be the inevitable result of this doctrine of competition, which has been taken up by the legislature at the suggestion of certain companies. Gentlemen, another result will inevitably arise—but *that*, perhaps, matters not—my honourable friends around me who have been the foremost to carry out the railway system to its present pitch, who, down in Liverpool and Manchester, established, without any foreign aid, and without any assistance from government, that system by which the public now benefit, will no longer condescend to take the management of these concerns if they find it necessary that everything shall be cut down to the lowest point of management. Do you believe, gentlemen, we shall any longer undertake the responsibility, the anxiety—the daily, nay, the hourly, anxiety—of these undertakings, if we do not feel that we really have the power of keeping up everything to that point of perfection which the public have a right to expect at our hands? Gentlemen, nothing less than the possession of such power could reconcile us to the daily and hourly anxieties which the responsibilities entailed by those managements involve."

Steam in 1736.—No. 103.

Jonathan Hulls, on the 21st of December, 1736, the year in which Watt was born, took out a patent for "a new invented machine for carrying vessels or ships out of, or into, an harbour, port, or river, against wind and tide, or in a calm;" and, in the following year, he published a pamphlet, detailing the nature of the invention, in which he makes the complaint alluded to in the text. Hulls' pamphlet is very rare; but a copy is preserved in the library of the British Museum, and is well worth the attention of those curious in the history of steam progress.

Trent and Mersey Canal.—No. 104.

The following statement shows the traffic for six months ending June, 1846 and 1847:—

YEAR 1846.

Month ending.	Revenue.	Expenditure.
February 15	£9,075 17 4	£4,765 15 6
March 15	9,347 1 3	4,835 7 8
April 15	9,424 1 10	3,169 11 3
May 15	11,151 5 9	3,708 1 2
June 15	8,125 15 8	1,620 6 10
	£47,124 1 10	£18,099 2 5
Expenditure		£18,099 2 5
Balance		29,024 19 5
		£47,124 1 10

YEAR 1847.

Month ending.	Revenue.	Expenditure.
February 15	£9,384 2 4	£2,129 0 0
March 15	10,403 17 10	3,774 6 9
April 15	9,704 12 4	2,636 6 2
May 15	12,587 15 11	2,083 19 9
June 15	8,217 7 2	2,187 2 10
	£50,297 15 7	£12,810 15 6
Expenditure		£12,810 15 6
Balance		37,487 0 1
		£50,297 15 7

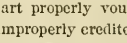
Surplus of net income on the five months ending 15th June, 1847, as compared with the five months ending 15th June, 1846 ..... £8,462 0 8

Bad Case of Officials pocketing money in getting up a Railway in 1845.—No. 105.

In the Court of Bankruptcy, 22nd April, 1847, for passing the examination of the Hon. F. H. Berkeley, M.P., Mr. Green and Mr. Barber, Directors of the Tring, Reading, and Basingstoke Railway, the following remarks were made in a report by Mr. Graham, the official assignee:—

"The list of the shareholders given at the end of the balance-sheet does not state the numbers of the scrip they respectively hold as respects 795 shares. In 550 of these it does not state even the name of the shareholders. The books containing the margins of the scrip are several of them not forthcoming, but in those which I have I find the scrip of the following shares gone, and no deposits debited to the company's cash:—G. P. Hill, solicitor to the company, 240; G. G. Green, secretary to the company, 15; C. G. Green, a director, 15; T. G. Everill, a partner of the solicitor, 15; blanks without a name, 30; S. Griffiths, 5; shares taken ont, 30; and deposits accounted for, 25; amounting altogether to 320 shares. The deposits on the 45 shares here mentioned as being in the names of G. G. Green, C. G. Green, and T. G. Everill, are stated in the scrip margin to be paid to the Commercial Bank, but Mr. Everill acknowledged that no part of this sum was ever paid in. The company is stated on the balance-sheet to have bought and sold its own shares, but no particulars are furnished me even of the names of the persons purchasing, or of the price for which the scrip was individually sold. In the 'allotment book' there are scrip for 115 shares marked as paid, the deposits on which the company is not debited with. The ten directors were alloted 200 shares each; all but one of them are returned on the balance-sheet as not having paid the deposits on their shares, and this one, it is believed, sold his shares, and then became disqualified. The solicitor, G. P. Hill, was one of the directors. He was also alloted 300 shares for his exertions in bringing out the undertaking, and 150 shares as a promoter. He is returned on the balance-sheet as not having paid on any of these shares, 650 in number. His partner, T. G. Everill, and G. C. Green, the secretary, were each alloted 350 shares, and they appear upon the balance-sheet as not

having paid upon any. The members of G. P. Hill's family had the following shares alloted to them:—Henry Holden, his brother-in-law, 50; H Holden, 20; H. Hill (a brother), 25; A. Hill (ditto), 20; R. Hill (ditto), 10; J. Hill (ditto), 10; M Hill (ditto) 10; and H. Hill (ditto), 10. All these are returned as not having paid the deposits on their shares. By this contrivance the directors, the secretary, the solicitors, and all the company are believed to have sought to cast the whole loss of the company upon the public, who have subscribed for 6,670 shares, instead of bearing their fair share themselves. On the credit side of the account the sum of £9,100 was lent, as follows, by G. P. Hill, for the company:—£6,300 to Messrs. Cox, sharebrokers, on their memorandum acknowledging to have borrowed that sum, and on the deposit of 1,355 shares in the Tring, Reading, and Basingstoke; £2,500 to the directors of another unsuccessful railway, to which Hill and Everill were also solicitors, and of which the directors consisted of many of the same persons as were directors of the Tring, Reading, and Basingstoke; £500 to a Mr. Roose, whose brother was one of the promoters of this company. Of the item of £18,554 18s., there is but a small part properly vouched. Without vouchers I can show that £500 is improperly credited, *i.e.*, £200 paid to Atkinson is credited to him, and £300 to Roose. It was proved before Mr. Commissioner Shepherd that a sum of £100 charged to a person of the name of Blunt was never received by him, but it was traced to have been paid into Mr. Prince's private account. Mr. Prince was a director who has left the country, yet this sum is here stated as having been paid to Mr. Blunt, instead of Mr. Prince being made a debtor for it. The principal part of this item of £18,554 18s., consists of Messrs. Hill and Everill's costs of moneys paid and liabilities incurred by them on behalf of the company. Of these I have no voucher whatever. I applied to them four months since for their bill of costs. They have never furnished it."



Good-will amongst Railway Companies.—No. 106.

Mr. Glyn, at a meeting of the London and North Western Railway, 13th August, 1847, stated as follows:

"We are anxious—sincerely anxious, as we have ever been—for a settlement of all differences between all companies. With those various companies with which we are in intimate connection, I am

happy to say, we never had a word—never a difference. Whether as regards the Midland, the York and Newcastle, and the other companies in that quarter, the Manchester and Leeds, or the Lancaster and Carlisle, we go on as if one body; and delighted should I be, gentlemen—much anxiety would be taken off our shoulders—if any circumstance should occur to allow a general feeling of amity and good-will to be established among all companies on a fair and proper basis. Gentlemen, it is not our fault—I will not say that the fault rests anywhere—but, on behalf of my colleagues and myself, I feel it my duty to express our sincere desire that circumstances may soon arise to enable all of us to pull together, with one common effort, should any renewed attempt be made in Parliament to interfere unjustly with your rights and property; and also—which I think it will be material for you very soon to consider—to give us a release from a constant attendance and anxiety in reference to the debates in Parliament, and to allow us rigidly, and, from time to time without interruption, to look into the internal management of our own concerns, and see how, by these means, and not by contests in Parliament, we can best promote your interests, and increase the value of your property."

Charges allowed by Railway Acts in 1845.

No. 107.

The following shows the variation of Charges allowed in different Acts passed in 1845:—

	Lowest maximum charge.	Highest maximum charge.
Animals per mile:—		
Horses	3d.	6d.
Sheep	½d.	2½d.
Carriages per mile	4d.	10d.
Goods per ton per mile:—		
Coals	1d.	4d.
Corn	1½d.	6d.
General merchandise	2½d.	6d.
Passengers per mile:—		
First class	2d.	4d.
Second class	1½d.	3d.
Third class	1d.	2½d.

Sugar Trade with England for 11 Years.—No. 108.

IMPORTED.

	West Indian. cwts.	Mauritius. cwts.	East India. cwts	Siam and Java, &c. cwts.	Brazil. cwts.	Cuba, &c. cwts.	All Places. cwts.
1836..	3,601,790	497,302	171,757	22,559	176,150	123,337	4,649,161
1837..	3,306,776	537,454	302,945	21,682	110,216	123,203	4 482,578
1838..	3,520,675	606,018	574,100	32,476	86,515	169,125	5,035,373
1839..	2,824,108	618,705	587,142	64,468	197,510	187,830	4,678,219
1840..	2,214,764	545,007	498,730	101,899	215,962	395,215	4,035,845
1841..	2,151,218	704,948	1,271,582	226,460	365,663	172,317	4,908,018
1842..	2,508,725	680,332	946,086	93,968	260,068	247,874	4,756,011
1843..	2,509,702	476,620	1,116,869	83,138	234,155	567,032	5,020,569
1844..	2,452,778	540,620	1,101,261	175,518	271,415	324,007	4,880,075
1845..	2,847,698	716,338	1,337,462	Not yet ascertained.			5,811,281
1846..	2,143,550	845,304	1,425,114				5,613,447

The following table shows a comparison of the stock on hand on the 31st of December in the six chief markets of Europe in four years, with a comparison of the prices at the different periods in question:—

Existing Stocks, Dec. 31.	1843.	1844.	1845.	1846.
	Cwts.	Cwts.	Cwts.	Cwts.
Holland*	155,000	150,000	120,000	125,000
Antwerp	121,000	55,000	140,000	78,000
Hamburg	215,000	95,000	170,000	100,000
Trieste	119,000	81,000	128,000	122,000
Havre	140,000	55,000	80,000	30,000
England	750,000	436,000	638 000	455,000
	1,202,000	1,315,000	1,278,000	1,105 000
Total	1,952,000	1,751,000	1,916,000	1,560,000
Total in Great Britain of Col. sugar..	808,000	865,000	826,000	682,000
Total Foreign Sugar	1,144,000	886,000	1,090,000	878,000

* In the first hands ONLY; in all other places in first and second.

VALUE AT THE END OF THE MONTH OF DECEMBER IN LONDON, PER CWT., WITHOUT DUTY.

	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d	s. d.
Musco., E. and W. India per cwt. ..	33 0 to 0 0	31 0 to 0 0	36 0 to 0 0	33 0 to 0 0
Havana, white	23 0 30 0	25 0 32 0	30 0 35 0	27 0 31 0
.... yellow and brown	18 0 22 0	18 6 23 0	20 0 26 0	21 0 25 0
Brazil, white	19 0 24 0	21 0 24 0	21 0 26 0	23 0 27 0
.... yellow and brown	15 0 18 0	16 0 19 0	19 0 21 0	21 0 22 6
Java	15 0 23 0	16 0 24 0	18 0 33 0	21 0 36 0
Patent, crushed in bond	25 9 26 0	31 0 0 0	34 0 0 0	33 0 0 0

What Weight of Engine will the Rails bear?

No. 109.

In the evidence taken by the Gauge Commissioners, on the 6th of August, 1845, Mr. Robert Stephenson thus answered the following questions:—

"159. Are you of opinion that the 4 feet 8½ gauge gives you sufficient space to get the utmost amount of power necessary for working ordinary trains?—Ample power and ample space. At present, I believe that there are more powerful engines working upon the narrow gauge than there are upon the broad gauge lines. There are engines capable of taking 400 tons at 15 and 16 miles an hour, or more; and I do not know of any engines upon the Great Western that are equal to that task.

"160. Will you describe those engines?—The cylinders of those engines are 16 inches in diameter, the length of stroke is 24 inches, and the wheels vary from 4 feet 6 to 4 feet 9 in diameter.

"161. Are they coupled?—They are all six coupled; and *those engines are as heavy as the present rails will bear.*

"162. What is the weight of them?—*They weigh from 22 to 23 tons;* I believe the same weight as the Great Western engines. I believe we have *now as great a weight* upon six wheels upon the narrow gauge *as ought to be put upon six wheels;* and that will be, in my opinion, hereafter the limit of power, not the width of gauge. We may build engines upon the wide gauge, no doubt, heavier and larger in dimensions, and more powerful, *but then you must make a road to support it on purpose.*"

Mr. M'Connell, of the locomotive department on the Birmingham and Gloucester, on the 11th of August, 1845, expressed himself as follows:—

"549. Are you of opinion that the injury to the rails and the permanent way would be augmented materially by the increased weight and speed?—It would be very much increased. I believe the injury to the permanent way on both gauges is more caused by high velocity than by increase of weight.

"550. Is that matter of opinion, or is it the result of any experiments you have made, or experience you have obtained?—I have observed myself, watching the trains going over the line, that the

shocks received from the fast trains appear to affect the rails more than the slow trains passing over, and that is the opinion of men who are particularly interested in it; the contractors who have the repairing of the permanent way, and who of course feel it in a pecuniary sense, they do not like fast trains so well as heavy trains at a slow speed.

"688. Have you given your attention in any degree to the subject of the maintenance of the permanent way on the broad gauge lines, and also on the narrow gauge lines?—It is rather out of my sphere to look into the expense of that; but I think, judging from what I have seen of the two lines, there is not much difference of expense in keeping up the permanent way of either. High velocities on the narrow gauge as compared with the broad gauge, I believe would not have the effect of increasing the expense so much in the narrow as in the broad.

"689. And why?—Because the machine would be *lighter on the rails* going at a high velocity on the narrow, *and not have such a tendency to damage the rails*"

Mr. Fernihough, superintendent of locomotives on the Eastern Counties, stated as under, on the 27th October, 1845:—

"4357. Do you consider that an increase of the gauge would afford you greater facilities for augmenting the power of your engines than you have at present?—The power of the engine is *limited by the strength of the rail;* and if you still retain the six wheels, you cannot, with the present plan of engine, get beyond a certain power; *the rails would not bear it.*"

Mr. Hawkshaw, engineer to the Manchester and Leeds, on the 4th November, 1845, said as follows:—

"5646. Are there any other observations with which you would favour us?—I would just mention one other point which appears to me to limit the size of engines very much. We have found now that we have got to the extreme size and weight; the rails are all crushing beneath the present size of the engines.

"5647. Rails of what weight?—I do not think the weight has much to do with it; the upper surface crushes off.

"5648. It cracks off; it splits?—It, in fact, squeezes out, and it strikes me that that will be an effectual limit to the size of the engines; you cannot make them heavier without destroying the rail.

"5649. The material, in fact?—The material will not bear any more pressure."

Mr. Edmund Woods, chief engineer to the Liverpool and Manchester, on the 7th November, 1845, gave the following answer to the question put to him :—

"5915. What is its present weight, and how much would you propose as the weight?—I think the strength of the rails determines the weight that you can safely go to in an engine. Our engines weigh from 15 to 16 tons; we have had engines passing over our line though not belonging to our company, which have weighed from 19 to 20 tons. I think 21 or 22 tons is the limit to which it might be safe to go on the rail that we at present use, which is 75 lbs. to the yard."

Salt exported from Liverpool during 13 Years.—

No. 110.

Year.	Tons.	Year.	Tons.	Year.	Tons.
1833	170,400	1838	390,839	1842	384,231
1834	162,265	1839	378,454	1843	462,840
1835	252,877	1840	431,705	1844	429,131
1836	232,626	1841	360,813	1845	431,155¾
1837	271,538				

Average per annum ..... 335,298 Tons.

Table shewing the quantity of Salt exported to each place from Liverpool during three years :—

	1842. Tons.	1843. Tons.	1844. Tons.
To the Baltic—Denmark, Norway, Sweden, Russia, Prussia, Mecklenburgh, Lubec, Hamburgh, Bremen, &c.	81,545	90,399½	90,032¾
To Holland and Belgium	47,313	26,740⅛	43,621⅛
To United States	93,887	130,528⅝	92,371
To Canadas	25,032½	37,055½	36,941⅛
To Africa and other Foreign parts of the world	11,957½	13,064¼	16,665¾
To England, Ireland, Scotland, Isles of Jersey, Guernsey, and Man	124,496½	165,051½	149,499¼
TOTAL	384,231½	462,840	429,131⅛

For further information on the salt trade, see Salt's *Statistics, &c.*, pages 30, 88, 96, and 107.

Sunderland Coal Trade.—No. 111.

License was granted by King Henry III., in 1239, "to the good men of Newcastle to dig coals and stones in the common soil of the town and outside the walls." In 1384, permission was given to export the produce of the mines. During the civil wars, in 1644, the export from Sunderland was greatly increased, as no coals were permitted to be brought from Newcastle to London, on account of that town being a stronghold of the royalist party. Between 1704 and 1711, the average annual export had reached 174,264 tons, and that of the year 1846, was 1,500,000 tons. The census in 1802 gave 19,100 inhabitants, whilst the town, in 1847, contains upwards of 60,000 persons.

Comparison of the Eastern Counties and London and North Western Goods Stations in London.

No. 112.

At a meeting of the Eastern Counties Railway Company, on the 12th of August, 1847, Mr. Hudson made the following remarks:—

"When, however, the Syston and Peterborough line shall be opened, and the Eastern Counties' Railway is thus brought into connection with the Midland, you may look forward to a large accession of traffic. I believe this will be one of the best feeders to the Eastern Counties' line, opening up a communication with the North of England. In goods, especially, a large amount of traffic may be expected, from the convenience of our station as compared with that of Euston-square—so much so, indeed, that already one of my constituents, a large glass-manufacturer at Sunderland, has made arrangements for warehousing his goods brought by our line. As Chairman of the Midland Company, I beg to say that all fair facilities shall be given for either route—those who choose to go by the Eastern Counties' line, may go; those who prefer Euston-square will have equal facilities from the Midland Company."

It will be well for both the Midland Company and the London and North Western Company if they can always keep at peace, but a thirst for the North and Scotch traffic may tempt Mr. Hudson to act differently hereafter.

Depreciation of Railway Stock in 1847.—No. 113.

At a Public Borough Meeting in the Town-hall, Manchester, on the 30th September, 1847, on the best means of suspending Railway Calls, Mr. Thomas Bazley, President of the Manchester Chamber of Commerce, said:—

"I observed, a week or two ago, in the *Manchester Times*, a statement in reference to the outlay of capital in 50 of the principal railways of the country during the present year, which outlay amounted to 13 millions sterling, employed in extending or improving those lines of railway. It is found that, by computing the total market value of those 50 lines at the commencement of the present year and at the resent moment, they stand at a loss in marketable value of 15 millions sterling, after having had 13 millions of additional capital applied to them. Here is a glaring deficiency of 28 millions sterling,—a sum that appears to be actually thrown away,—that might as well have been sent out of the country without consideration, or sunk in the sea, as have been employed in the prejudicial manner it has been. If railway proprietors themselves cannot see that by paying further calls they are depreciating the value of the property they already possess, they are much duller of comprehension than men of business ought to be, or usually are."

Pay to Directors.—No. 114.

At the 20th Half-yearly Meeting of the Manchester and Leeds Railway Company, 9th September, 1846, the following remarks were made:—

"Mr. Gill moved that the allowance to the Directors be in future £3,600. Although a Director himself, he did so, knowing the labour that had to be performed, and the line being now nearly seven times as long as it was when the remuneration was originally fixed. The amount would be £100 to each Director, as the number was in future to be 36."

"Mr. Rawson had great pleasure in seconding the resolution, knowing that the Directors were generally not as well paid as journeymen tailors. He most cordially seconded the resolution, because, when they paid their Directors, they could demand that they should attend to the business."

Statement of the Export Cotton Trade of India from 1833-34 to 1845-46.—No. 115.

Periods.	Bombay.		Calcutta.		Madras.		Tuticorin.		Total Of all India.	
	Cwts.	Value. Rupees.	Cwts.	Value. Rupees.	Cwts.	Value. Rupees.	Cwts.	Value. Rupees.	Cwts.	Value. Rupees.
1833–34.	....	....	105,469	14,32,501	12,491	1,96,696	3,116	41,902	121,076	16,71,099
Jan. 1st to April 30th, 1834.	282,023	58,74,839	....	....	....	....	....	....	282,023	58,74,839
1834–35	578,425	1,29,07,397	247,465	31,46,139	39,214	641,225	2,456	32,970	867,560	1,67,27,731
1835–36	701,062	1,75,89,218	428,886	62,63,777	166,334	25,98,428	9,500	1,27,623	1,305,782	2,64,79,046
1836–37	1,031,219	1,76,77,778	319,954	38,39,337	197,933	36,08,555	8,357	1,12,294	1,557,463	2,52,37,964
1837–38	870,046	1,39,66,341	149,798	18,61,165	36,884	6,10,211	5,661	76,040	1,062,389	1,65,13,807
1838–39	906,158	1,43,20,590	171,741	22,21,889	83,558	14,69,856	2,085	28,007	1,163,542	1,80,40,342
1839–40	833,306	1,46,47,718	132,608	18,27,543	136,606	23,57,185	28,331	3,80,769	1,130,851	1,92,13,215
1840–41	1,176,042	1,90,14,425	135,783	19,26,237	105,619	15,77,549	18,835	2,53,108	1,436,279	2,27,71,319
1841–42	1,437,733	2,16,79,410	81,069	12,05,347	199,718	26,95,115	68,891	7,91,518	1,777,411	2,63,71,390
1842–43	1,318,239	1,89,26,926	126,290	17,16,983	216,178	28,19,480	32,745	4,40,108	1,693,452	2,39,03,497
1843–44	1,530 837	2,10,58,233	148,019	21,25,140	144,642	14,03,330	42,473	5,70,990	1,835,961	2,50,57,693
1844–45	1,199,843	1,53,16,244	148,314	20,18,745	159,994	21,19,841	115,013	15,45,790	1,623,164	2,10,00,620
1845–46	1,150,181	1,36,67,993	68,892	9,35,164	59,972	7,14,183	49,461	6,64,720	1,328,506	1,59,82,060
May 1st to Dec. 31st, 1846.	600,455	68,08 811	....	....	....	....	....	....	600,455	68,08,811
Total	13,615,569	21,32,55,923	2,264,278	3,04,19,967	1,529,143	2,28,11,654	376,924	50,65,889	17,785,914	27,15,53,433
Annual average	1,047,351	1,64,04,302	174,175	53,39,997	117.626	17,54,743	28,994	3,89,684	1,368,146	2,08,88,726

ABSTRACT OF THE ABOVE.

Port of		Period of 13 Years.	Quantity. Total.	Quantity. Annual Average.	Value. Total.	Value. Annual Average.
			Cwts.	Cwts.	Rupees.	Rupees.
Bombay	per statement A.	1st Jan. 1834 to 31st Dec. 1846.	13,615,569	1,047,351	21,32,55,923	1,64,04,301
Calcutta	.... B.	1st May 1833 to 30th April, 1846.	2,264,278	174,175	3,04,19,967	23,39,997
Madras	.... C.	ditto ditto	1,529,143	117,626	2,28,11,654	17,54,783
Tuticorin	.... D.	ditto ditto	376,924	28,994	50,65,889	3,89,684
Grand Total of 13 years for all India			17,785,914	....	27,15,53,433	....
Annual average of quantity and value of 13 years for all India			....	1,368,146	....	2,08,88,726

Birmingham and Oxford Junction.—No. 116.

The origin of this line was thus described by Mr. Whately to a Committee of the House of Commons, on the 6th of May, 1847 :—

"The Birmingham and Oxford Junction was first projected in the year 1845, by the Grand Junction Company, who were dependent upon the London and Birmingham for the conveyance of all their traffic to London, and they complained of the impediments thrown in the way of their traffic, and of the loss occasioned thereby. These complaints were frequently made, but no remedy was afforded ; no amelioration effected. These impediments arose not only with respect to the goods which came from Manchester and Liverpool, but with respect also to the traffic from the immediate districts. For a considerable time complaints of these evils were made by the ironmasters of South Staffordshire and the manufacturers of that district, that they had no access to London. He believed that it arose from what Mr. Stephenson said—viz., 'that the company were clogged with traffic.' They placed an effectual barrier upon its being sent to London by their (the London and Birmingham) railway by the very high and exorbitant tolls which they imposed. The committee would hear the South Staffordshire manufacturers, at least one of them had stated in the next room that he was actually obliged to send his goods to London by way of Hull, because he could send them to that port either by railway or canal, and thence by water to London at a much less cost than by railway to London *via* the London and Birmingham Railway. That gentleman had stated that while the cost per ton of goods to London by the London and Birmingham was 45s. for a distance of not more than 112 miles; the cost of sending them *via* Hull, a distance of 130 miles, was only 13s. per ton. There was an application made first of all to the Grand Junction, and then to the Great Western ; the latter did not at first acceed to it ; they, however afterwards gave it their most cordial support. The Grand Junction applied to the Great Western to join them in making the line from the terminus at Birmingham to a place called Fenny Compton, where it would join the line which was then before Parliament—viz., the Oxford and Rugby. It was proposed at length that the line should be made by the Grand Junction in connection with the Great Western Company. The ironmasters of South Staffordshire cordially supported the plan, and it was intended that the bill should be introduced into

Parliament for that purpose. Before the bill could be brought in the Grand Junction and the London and Birmingham had settled their quarrels. The Grand Junction, however, said, 'We have no part in the scheme; the directors have done this, and whatever they have done has been upon their own account. We will take no part in it, and we therefore withdraw at once from the concern.' But all did not withdraw. There was one gentleman, if not more, who should be mentioned with the greatest honour. A gentleman of the name of Roberts, said, 'I cannot do this; I have entered into it as your agent: I will support it still, and I will go and give evidence in its favour before the parliamentary committee, although the company in which I had interest as a shareholder may oppose it.' The parliamentary contract was entered into, the bill was brought in, and brought in by the person he had mentioned. A great number of the shareholders of the Great Western and Grand Junction were subscribers to it to a large amount."

Coal.—No. 117.

Statement of the quantity of Coal and Slack brought into Liverpool during the year 1844:—

From.	Conveyance.	Tons.
St. Helens	By Canal to Widness Dock	380,000
Ditto .... Wigan,	By Railway to Runcorn Gap.....	140,000
St. Helens, &c.	By L. and M. Railway to Crown-street....	100,000
Wigan.....	By Leeds and Liverpool Canal.....	470,000
Worsley	By Duke's Canal	25,000
Prescot, &c. ..	By Turnpike Road	20,000
	Total	1,135,000

Consumed in the town of Liverpool and neighbouring Brick-fields	450,000	Tons.
Consumed in Cheshire, twelve Ferries on the River Mersey, Dungeon Works, &c.	50,000	,,
Consumed by Shipping for use in vessels' cabins alone	60,000	,,
Consumed by Steamers on River to Ferries, Coastwise, &c.	110,000	,,
Exported to East and West Indies, Spain, Portugal, and all other places	465,000	,,
Total	1,135,000	Tons.

Cost of Coal at Pontypool.—No. 118.

Before a Parliamentary Committee, on the 12th May, 1847, Messrs. Llewellyn and Carter, coal agents, said:—

"That coal in the Forest of Dean could not be sold for less than 7s. a ton at the pit's mouth, while the coal about Pontypool could be raised for 4s. 6d. a ton, and sent to Newport and Abergavenny at 10s., and to London for 21s., if there was a continuous railway between London and that district. At the present time the same coal is sold in London at 24s. wholesale."

Tea Trade with England for 11 Years.—No. 119.

The following table shows the comparison of the imports, exports, consumption, and total deliveries of each year since 1836:—

	Imported. lbs.	Exported. lbs.	Consumed. lbs.	Total deliveries. lbs.
1836	49,307,701	4,269,863	49,142,236	53,412,099
1837	36,973,981	4,716,248	30,625,206	35,341,454
1838	40,413,714	2,577,877	32,351,593	34,929,470
1839	38,158,009	3,318,912	35,127,287	38,446,199
1840	28,021,882	2,383,384	32,252,628	34,636,012
1841	30,787,796	4,490,363	36,675,667	41,166,030
1842	40,742,128	5,710,127	37,355,911	43,066,038
1843	46,612,737	4,584,141	40,293,393	44,877,534
1844	53,147,078	4,828,985	41,369,351	46,198,336
1845	51,057,930	4,055,585	44,183,135	48,250,906
1846	54,768,299	3,533,668	46,728,208	50,261,876

The chief countries to which tea was exported in 1844 were as follows:—

	lbs.		lbs.
Russia	112,232	Ionian Islands	15,246
Sweden	9,919	Turkey	45,125
Norway	15,324	Cape of Good Hope	57,381
Denmark	211,981	Mauritius	7,010
Prussia	87,279	East Indies	13,034
Germany	1,097,118	Australia	23,711
Holland	395,299	British North America	1,760,808
Belgium	110,007	West Indies	75,706
France	27,629	United States	168,572
Spain	4 058	Channel Islands	383,405
Gibraltar	66,636		
Italy and Italian Islands	35,694	Total, including minor places	4,828,985
Malta	32,031		

Mr. Houldsworth's Opinion of Mr. Strutt in 1846.

No. 120.

Mr. Houldsworth said at a Meeting of the Manchester and Leeds Company, 9th September, 1846:—

"He considered it a matter of congratulation that Parliament had decided on the appointment of a Railway Board, and particularly gratifying that so practical a man as Mr. Strutt was placed at the head of it; and he (the Chairman) considered that all they had now to fear from Parliament was from their ignorance of what should be considered a fair remuneration for the anxiety, uncertainty, and expense attendant upon railway management."

Estimated Traffic in Goods received and forwarded by Inland Navigation to and from Liverpool, in the Year 1844.—No. 121.

Received.	Tons.	Forwarded.	Tons.
Iron of all sorts	120,000	Cotton of all sorts	220,000
Nails and Hardware	75,000	Timber and Deals	185,000
Earthenware	56,000	Grain and produce thereof	140,000
Timber (round)	4,000	Clay, Flints, &c.	68,000
Machinery	14,000	Dyewoods	14,000
Castings	16,000	Drysalteries	18,000
Lead and Metals	5,000	Palm Oil, Tallow, Rosin, Tar, Pitch, &c.	13,000
Ale, from Burton	6,000	Brimstone	7,000
Malt, Flour, and Grain	4,000	Wool	14,000
Stourbridge Bricks	6,000	Sugar and Molasses	15,000
Tin Plates	7,000	Butter, Provisions, &c.	18,000
Quicksilver, &c.	1,000	Lead and Foreign Iron	4,000
Sugar, Tobacco, Coffee &c.	3,000	Porter (Irish, &c.)	4,000
Flint and Crown Glass	4,000	Fish and Eggs	5,000
Cotton Twist and Yarn	12,000	Bales and Cases, Linens, Cottons, Irish and Scotch goods and general	85,000
Bales and Cases, Cottons, Woollens, Silks, Thread, and general manufactured goods	160,000	Machinery	3,000
Fruit and Vegetables	4,000	Castings	2,000
Flags, from Yorkshire	45,000	Guano	12,000
Indigo, Cochineal, Tea, Wines & Spirits, Cowries, &c. from London for Exportation	2,000	Tea and Coffee	3,000
		Wines and Spirits	4,000
Sundries	56,000	Sundries	66,000
	600,000		900,000
Total	1,500,000 Tons.		

A similar return for 1843 may be seen in Salt's *Statistics and Calculations*, p. 40.

Merchandise Traffic to and from Liverpool, by Railway.—No. 122.

For the following interesting and accurate tables I am indebted to Mr. Braithwaite Poole, who has so efficiently managed the Merchandise Department of the Grand Junction Railway, at Liverpool, since 1841; they show the amount of Tonnage carried over the Grand Junction, Liverpool and Manchester, North Union, Bolton and Leigh, and St. Helens Junction Railways to and from Liverpool, during 3½ years, ending 30th June, 1845:—

Date.	Grand Junction.	Liverpool and Manchester.	North Union.	Bolton and Leigh.	St. Helens.	Grand Total.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1842	40,187	157,270	25,942	23,474	6,003	252,876
1843	43,327	171,340	20,552	26,751	5,484	267,454
1844	67,608	194,010	20,807	29,612	5,941	317,978
½ year 1845	38,153	99,499	12,463	14,441	3,329	167,885

Analysis of Tonnage over each separate line of Railway.

Grand Junction, South.					Liverpool & Manchester, East.				
Date	London.	Birmingham.	Road.	Total.	Date	Manchester.	Road.	Carriers	Total.
	Tons.	Tons.	Tons.	Tons.		Tons.	Tons.	Tons.	Tons.
1842	6,954	17,882	15,351	40,187	1842	136,585	5,580	15,105	157,270
1843	8,087	18,886	16,354	43,327	1843	127,316	6,441	37,583	171,340
1844	9,704	24,245	33,659	67,608	1844	133,015	8,389	52,606	194,010
½ yr. 1845	5,555	12,360	20,023	38,153	½ yr. 1845	64,029	4,534	30,906	99,499

North Union Line.				Bolton Line & St. Helens.	
Preston and Lancaster.	Wigan.	Total.	Date.	Bolton and Chorley, &c.	St. Helens.
Tons.	Tons.	Tons.		Tons.	Tons.
17,204	8,738	25,942	.....1842.....	23,474	6,003
12,717	7,835	20,552	.....1843.....	26,751	5,484
11,831	8,976	20,807	.....1844.....	29,612	5,941
7,685	4,778	12,463	Half Year. .....1845.....	14,441	3,329

Tables shewing the Description of Goods carried over the Grand Junction and Liverpool and Manchester, in the year 1844:—

Grand Junction.				Liverpool and Manchester.	
	Tons.		Tons		Tons.
Iron	11,237	Brot. forward	42,946	Cotton	40,685
Bales and Cases	9,400	Tea and Coffee	645	Flour	8,939
Grain, &c.	3,889	Fruit, ripe	635	Butter	6,776
Nails and Sads.	3,783	Wines and Spirits	544	Timber	4,722
Cotton	2,567	Guano	525	Dyewoods, &c.	3,447
Sugar & Molasses	2,165	Wool	466	Fish and Eggs	3,194
Fish and Eggs	2,100	Holloware	361	Sugar	3,141
Tin Plates, &c.	1,521	Hides	293	Wool	3,005
Timber & Deals	1,376	Castings	158	Wines & Spirits	2,696
Butter	1,134	Yeast	118	Metals	1,666
Lead & Metals.	1,111	Cowries	112	Tea & Coffee	873
P. Oil & Tallow	1,042	Leather	111	Porter & Ale	505
Ale and Porter.	949	Tobacco	110	Tallow	312
Meat, Fresh	672	Provisions	100	Pigs (Wapping)	2,636
Car. forward.	42,946	Sundries	20,484	Sundries	111,413
	Totals.		67,608 Tons	and	194,010 Tons.

Amounts paid by Toll Carriers at Wapping for half year from 1st January to 30th June, 1845.

	£	s.	d.		£	s.	d.
Carver & Co.	4,460	7	5	Hunt and Co.	487	3	4
J. Hargreaves, junr.,	3,474	18	10	Jackson and Co.	448	17	10
Pickford and Co.	2,559	4	6	Barnby, Faulkner, and Co.	286	4	6
Cockerham & Co.	1,296	15	1	Ann Johnson	177	7	9
Marsden and Co.	798	3	4	Pearson and Co.	111	13	8
Kenworthy and Co.	798	1	11	Veevers and Co.	19	8	2
St. Helens Railway Co.	668	7	8				
Thompson, M'Kay & Co.	618	12	5		£16,205	6	5

Chester Races.—No. 123.

The Chester Races appear to have provoked a great influx of travellers by railway. The London and North-Western brought 10,000 passengers into Chester on the "Cup day" alone; and the numbers who came by the Chester and Birkenhead line were, on Tuesday week, 2,428; on Wednesday ("Cup day"), 9,563; on Thursday, 3,198; and on Friday, 2,270. The Chester and Birkenhead received no less than £2,174—the average weekly traffic being about £600 only! The Shrewsbury and Chester line received £601.

Railway Chronicle, 15th May, 1847.

Coffee Trade with England for 11 Years.—No. 124.

COFFEE—IMPORTED.

	British Possessions. lbs.	Foreign. lbs.	Total. lbs.
1836	28,784,622	5,270,215	34,054,837
1837	25,134,418	11,278,096	36,412,514
1838	22,506,304	17,425,975	39,932,279
1839	15,729,695	25,273,621	41,003,316
1840	20,987,869	49,262,897	70,250,766
1841	17,060,992	26,256,770	43,317,762
1842	20,481,655	20,962,759	41,444,414
1843	18,277,553	20,664,916	38,942,469
1844	24,113,230	22,409,958	46,523,188
1845	23,151,602	27,233,767	50,385,369
1846	24,110,948	27,523,966	51,634,914

COFFEE—EXPORTED.

	Of British Possessions. lbs.	Foreign. lbs.	Total. lbs
1836	3,731,388	6,950,370	10,681,758
1837	1,649,272	6,411,703	8,060,975
1838	152,713	11,140,577	11,293,290
1839	36,399	12,726,188	12,762,587
1840	96,764	12,610,650	12,707,414
1841	359,842	13,914,254	14,274,096
1842	62,857	9,442,777	9,505,634
1843	125,824	12,557,619	12,683,443
1844	155,703	6,150,279	6,305,982
1845	625,060	18,604,561	19,229,621
1846	785,835	10,954,164	11,739,999

Cost of conveying Goods by Railway.—No. 125.

At a Meeting of the Manchester and Leeds Company, at Manchester, 9th September, 1846, Mr. H. Houldsworth, the Chairman, stated as follows :—

"Mr. Morrison had said that in consequence of the cheapness of fuel in this country, that they would make as much by carrying 750,000 tons at 1d. per ton per mile, as the Paris and Rouen Railway could make by carrying 150,000 at 3d. per ton. Now, the prime cost of carrying a ton of goods on their line was 1d. per mile. His friend, Mr. Hawkshaw, whose opinion was of more value than his, said 1¼d., but he would take 1d.; so that if they carried 1,000,000 of tons, the shareholders would see that they could receive no profit."

Nobody responsible for Blunders made in Railway Acts.—No. 126.

Mr. Bigg, in his collection of Railway Acts for 1845, points out the evil of the want of uniformity and accuracy in Railway Acts:—

"The Shareholders of a company are not responsible, because they are not as a body consulted respecting the details of the bill, and do not hold their first meeting until after the act has received the royal assent.

"The Solicitors are not responsible. 'In the preparation of railway bills a great deal is necessarily left to their discretion;' but 'clauses are pressed upon them against their will by parties whom they are extremely desirous of obliging;' and the appeal to the knowledge of honourable members 'that in the last few months they really have not had a fair chance in doing their business, on account of the pressure there has been upon them.'

"The Agents are not responsible. A gentleman who had one hundred bills under his charge, stated to the Committee on Petitions last session—'I certainly should not conceive, in advising upon the insertion or non-insertion of clauses, that I could be absolutely responsible to the house, or to any other persons, for those clauses, whether right or wrong. It is in the discretion of Parliament, after those clauses are in, to deal with them as they think fit; and it happens that, in a great proportion of the bills which I am instructed to pass, I should give my own individual opinion against clauses which, nevertheless, are insisted upon being inserted and are inserted.'"

Extent of Railway under the management of Mr. Hudson in 1847.—No. 127.

The entire length in miles, which acknowledged the guiding and controling power of Mr. Hudson, in May, 1847, was :—

Midland	547¼ miles
Eastern Counties	312½ „
York and North Midland	307½ „
York and Newcastle	256¾ „
Newcastle and Berwick	107½ „
Total	1,531½ miles.

Of this territory, 859 miles are in active operation, producing the following weekly traffic :—

Div.	Line.	Miles.	Traffic.
7	Midland	348½	£17,676
10	York and North Midland	171	5,673
9	York and Newcastle	157½	7,955
6	Eastern Counties	174	10,054
5	Newcastle and Berwick	8¾	658
		859	42,016

Showing a present annual income of £2,184,832, which, on the completion of the lines already granted and in progress, may be expected to reach five millions per annum.

West Riding Union Railway in 1846.—No. 128.

On Friday the 20th February, 1846, the scheme was before the Standing Orders Committee, and a decision stated. One party said it had failed, another that it had passed Standing Orders. On Saturday the scheme was announced in the votes, to have passed Standing Orders, and bill ordered to be brought in. On Monday this announcement was declared incorrect in the House of Commons, and on Tuesday it was confirmed. To make the *amende* for the successive contradictions, the whole of the proceedings before the Standing Orders Committee were then declared *null*, and the petition again referred to its consideration; and on the 27th February, the Standing Orders Committee declared, for the second time, that the Standing Orders had *not* been complied with.

Mr. Crampton's Engine, the "Namur."—No. 129.

The "Namur" is a six-wheeled engine, with the whole of the working parts outside:—

Diameter of driving wheel	7 ft.	
Ditto supporting ditto	3 ft.	9 in.
Distance between centre of extreme wheels	13 ft.	
Diameter of cylinder		16 in.
Length of stroke		20 in.
No. of tubes	182	
Length of tubes	11 ft.	
Diameter of ditto, outside		2 in.
Length of fire-box	4 ft.	3 in.
Breadth of ditto	3 ft.	5 in.
Area of fire-grate	14 ft.	6 in.
Surface in fire-box	62 ft.	
Surfaces of tubes inside	927 ft.	
Total surface	989 ft.	

The total surface is less than in many engines on the London and North Western. This engine is one of two ordered by Mr. George Rennie for the Directors of the Namur and Liege, Belgium; and in May, 1847, was working on the London and North Western Railway very satisfactorily.

The Patent Street-sweeping Machine *v.* Hand Sweeping.—No. 130.

There has been much difference of opinion as to the relative cost of scavenging by the Road and Street Cleansing Company's patent machine, and by men (usually paupers) employed with brooms. The following is an official report on the subject, deduced from actual experiments made in Salford, and, as every item is enumerated, it will enable any one to judge for himself:—

Comparative Statement of the Annual Cost of Sweeping in Salford, by Hand Labour and by the Patent Street-sweeping Machines. (Experiment conducted by E. Ransbottom, July 2nd, 1847.)

HAND LABOUR.

12 men, by hand labour, viz., 9 sweepers, 1 carter, and 2 fillers, with 1 horse and cart, cleanse in one day, 12,122 superficial yards, and cost per annum, £273 18s. 8d., viz.:—

	£	s.	d.
7 Sweepers, paupers from workhouse, at 1s. 2d. per week	21	4	8
2 Ditto—one at 11s. and one at 6s. per week	44	4	0
1 Carter, at 15s. per week	39	0	0
2 Fillers, at 11s. per week	57	4	0
1 Horse, keep 18s. per week	46	16	0
Farriery	4	0	0
Repairs of carts and geers	10	0	0
Wear and tear of horse and geers, cost £30, say 10 ℔ cent	3	0	0
Interest on cost of horse, cart, and geers, (£50) say 5 ℔ cent	2	10	0
Besoms, spades, &c.	16	0	0
Proportion of superintendent's salary	25	0	0
Rent of stable and cart shed	5	0	0
	£273	18	8

MACHINE LABOUR.

One machine, with one horse, carter, and channel-man, sweeps in one day, 18,216 superficial yards, and costs per annum £204, viz.:—

	£	s.	d.
1 Machine (patent right)	27	10	0
Loss of interest by paying four years in advance	3	8	9
New Brooms, five sets, at £6	30	0	0
Repairs &c. of machine	15	0	0
1 Carter, at 16s. per week	41	12	0
Proportion of wages of one channel-man, say 4s. 6d. ℔ week	11	14	0
Provender for one horse, at 18s. ℔ week	46	16	0
Wear and tear of one horse, cost £35, say 10 ℔ cent.	3	10	0
Farriery, and repairs of geers, &c.	8	0	0
Interest on cost of horse and geers (£42), say 5 ℔ cent.	2	2	0
Proportion of superintendent's salary	10	0	0
Rent of stable and shed for machine	5	0	0
	£204	12	9

COMPARISON: If 18,126 superficial square yards are swept daily by machine, at a cost of £204 per annum, 12,122 yards would only cost £136, whilst by hand labour it costs £273, or more than double the amount the same work would cost if done by machine.

DAVID CHADWICK, Borough Treasurer.

Town Hall, Salford, July 16th, 1847.

Increase of Travellers leads to Diminution of Fares.—No. 131.

Already we have 10,000 miles of railway made, making, or sanctioned, superseding more or less the 25,000 miles of turnpike-roads which exist in England and Wales. As railways have spread, travellers have increased in number, and fares have been diminished. In 1845, the London and Birmingham conveyed more than treble the number of passengers over twice the number of miles, for less than double the amount received in 1839.

	PASSENGERS.	MILES.	RECEIPTS.
Half-year ending June, 1839	267,144	17,391,035	£270,241
1845	615,904	38,758,260	447,190

Sidney's Speed on Railways.

Inland Trade of Liverpool in 1844.—No. 132.

Table shewing the various parts of Liverpool where the Inland trade is carried on:—

1844. Goods removed at	Carriers.	Rising Cranes.	Loading Flats &c. ℔ week.	Average Tons ℔ Flat.	Total Tons ℔ annum.
Duke's Dock and	20	49	276	25	358,800
Anderton Basin	1	2	10	25	13,000
Railway Termini	10	50	..	..	317,978
Small River Craft Dock	7	6	48	40	99,840
Harrington Dock and Basin	2	5	30	40	62,400
Egerton Dock	1	4	18	40	37,440
Old Quay Dock and	4	20	95	25	123,500
S.W. corner of George's Dock	7	13	38 74	40 30	193,440
Transhipped in Docks by Anderton Co., the Ellesmere Canal Co., Trustees of the Duke of Bridgewater, &c.; Earthenware, Clay, Iron, &c., &c.	..	..	..	..	110,060
Sundry carriers on turnpike road	18	..	..	..	10,462
Leeds and Liverpool Canal	5	13	..	..	173,080
	75				1,500,000

A similar Return for 1843 may be seen in Salt's *Statistics and Calculations*, p. 39.

Railway Passengers from an Agricultural District.
No. 133.

Before the Select Committee on Railway Acts Enactments in 1846:—

"Mr. Samuel Morton Peto, who has had considerable experience in the construction of railways in manufacturing districts, and is deeply interested in the Norfolk lines as a proprietor, states, as the result of his experience, that, 'the people in manufacturing districts do not travel anything like so much as an agricultural population;' and that, 'he would rather, if he could get a moderately-priced line, have it in an agricultural district than in a manufacturing district, as far as the population of the district is concerned.'"

Errors in Railway Acts.—No. 134.

There are many instances of great carelessness in drawing up Railway Acts, and the following is one as passed in 1845:—

"The Edinburgh and Hawick Railway Act is entitled 'An act for making a railway from the Edinburgh and Hawick Railway to the town of Hawick, in the county of Roxburgh.' The object of the act is to make a railway from the Edinburgh and Dalkeith Railway to the town of Hawick; the inaccuracy in this case is so very plain, that it appears almost impossible to an act to authorize the construction of a railway, the termini of which appeared by the title to be one and the same place, should have passed through Parliament without exciting attention."

And the following shows the variance of the number of Directors appointed, with what are prescribed in Acts passed in 1845:—

	Prescribed number.	Number appointed.
Berks and Hants	Eight.	Five.
Cockermouth and Workington	Twelve.	Fourteen.
Dundalk and Enniskillen	Fifteen.	Seventeen.
Erewash Valley	Six.	Nine.
Glasgow, Barrhead, and Neilston	Nine.	Thirteen.
Ipswich and Bury St. Edmond's	Fifteen.	Thirteen
Lowestoft	Six.	Seven.
Midland Great Western of Ireland	Fifteen.	Twenty-three.
South Wales	Eighteen.	Fifteen.

Railway Acts passed in 1845 —No. 135.

The following is a Summary of Special Railway Acts passed in session 1845:—

AMOUNT OF MONEY AUTHORIZED TO BE RAISED.

	England and Wales.			Scotland.			Ireland.			Total.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
By acts incorporating Companies for the construction of new lines of Railway..	7,502,466	0	0	7,013,262	13	4	8,299,332	6	8	22,815,061	0	0
By acts incorporating Companies for the construction of lines of Railway in connexion with existing Companies.....	19,283,745	0	0	733,333	6	8	.....			20,017,078	6	8
By acts authorizing existing Companies to construct Branch or Extension lines....	11,359,361	6	8	818,333	6	8	2,000,000	0	0	14,177,694	13	4
By acts not authorizing the construction of any new Railway or Branch.....	4,347,540	2	6	.....			.....			,347,540	2	6
Total.....	42,493,112	9	2	8,564,929	6	8	10,299,332	6	8	61,357,374	2	6

LENGTH OF RAILWAY AUTHORIZED TO BE CONSTRUCTED.

	England and Wales.			Scotland.			Ireland.			Total.		
	M.	F.	C.	M.	F.	C.	M.	F.	C.	M.	F.	C.
By acts incorporating Companies for the construction of new lines..... ...	375	5	2½	353	5	6	531	5	4	1261	0	2½
By acts incorporating Companies for the construction of lines in connexion with existing Railways.....	860	4	7	54	2	6	.....			914	7	3
By acts authorizing existing Companies to construct Branch or Extension lines....	428	6	5	28	4	8	112	5	4½	570	0	7½
Total.....	1665	0	4½	436	5	0	644	2	8½	2746	0	3

Tractive Power of Locomotive Engines on heavy Gradients.—No. 136.

The *Morning Herald* says, in April, 1847, we had the pleasure of being present at several of a series of experiments made by Mr. Gooch (locomotive superintendent of the Great Western), on the Stroud incline of the Gloucester line. The portion of the Gloucester line on which the experiments were made, is that lying between the 98½ and the 95⅞ mile-posts, viz., over 2¾ miles. The line, for the whole of this distance, is a series of S curves, varying from 2,000 to 3,600 feet radius; and the starting point, from which the experiments commence, viz., the 98½ mile-post, is on a rising gradient of 1 in 105. The average rates of speed at which the several loads were taken, placing the gradients in the order that they occur from the starting point—viz., the 98½ mile-post:—

Average speed over the gradients as they occur from the starting point.	Great Western, 50 tons. Miles per hour.	Great Western, 60 tons. Miles per hour.	The 2 engines, 111 tons. Miles per hour.	Dreadnought, 111 tons. Miles per hour.	Great Western, 70 tons. Miles per hour.
1 in 105 for about a furlong	11	10	11½	11	9
1 in 75 for about ½ mile.	24½	22	22	19½	19
1 in 70 for nearly ½ mile	29½	26½	25½	20⅝	21
1 in 75 for about ¾ mile.	33½	31	29¼	23	26
Level for about ¼ mile.....	38½	34½	33	27¼	31
1 in 70, nearly ¼ mile.	39½	35⅝	36¼	29⅝	32½
1 in 60, ½ mile	38	33	35	26	31

The advantage of what is called "running" at a heavy gradient, that is, approaching it from a descent or a level, will be easily understood by the reader if he attends to the great increase of speed attained over the level of only a quarter of a mile, and the further increased rate over the gradient immediately beyond it.

Parliamentary Expenses in obtaining Railway Acts.—No. 137.

The following Remarks are made by the Committee on Railway Acts Enactments in 1846:—

"Some idea may be formed of the magnitude of the sums absolutely wasted in this country before bills can pass through committees, from a return just made by the Eastern Counties Railway Company to an order of the house. The line, which is 51 miles in length, cost £45,190 in parliamentary expenses. The other preliminary expenses, such as cost of engineering, &c., amounting to £48,650

are separately stated. The parliamentary expenses of the London and Birmingham have been stated at £650 per mile; of the Great Western at £1,000 per mile. No wonder that foreigners hold up their hands in astonishment when they hear of this enormous waste. The sums paid for land by the Eastern Counties amounted to £809,950, or about £12,000 per mile, alone exceeding the whole cost per mile on most of the German lines, and on several of the Belgian. The London and Birmingham and the Great Western paid £6,300 each per mile for lands. In the case of the Rouen and Havre line, Mr. Reed states that £6,000 was paid to three gentlemen who made considerable exertions to obtain the act, but that the expenses incurred in the inquiry before the board, and up to the time the act was obtained, amounted in all only to £700."

Emigration from Liverpool.—No. 138.

"We *(Liverpool Mail)* are indebted to Lieutenant Hodder, R.N., the Government emigration-agent, for the subjoined interesting statistics. Premising that the ordinary emigration from Liverpool to all parts of the world used to be about 40,000 souls per annum, it will be seen, that even this large expatriation has been, in 1847, augmented almost *fourfold!* Return, showing the emigration from the port of Liverpool during the year 1847:—

	Jan. 1 to Mar. 31.	April 1 to June 30.	July 1 to Sept. 31.	Oct. 1 to Dec. 31.	Totals.
United States.....	29,531	33,795	20,311	20,028	103,665
South America	53	9	30	115	207
N. American Colonies, viz:—					
Canada	243	23,362	4,552	....	28,157
New Brunswick ..	77	1,135	270	8	1,490
Nova Scotia	34	76	77	6	193
Newfoundland	20	50	43	....	113
Pr. Edward's Island	....	444	....	....	444
West Indies.....	15	49	45	46	155
Africa, viz:					
Western Coast	26	13	9	8	56
Cape of Good Hope	4	....	10	....	14
Australia, viz:					
Sydney	....	....	4	3	7
Western.....	....	10	....	....	10
Hong Kong.....	....	4	....	7	11
Other Ports.....	....	....	....	2	2

Total emigration during 1847.....134,524
Ditto 1846..... 74,913

Increase 59,611

Yarmouth Fish Trade in 1847.—No. 139.

The following is a Monthly Statement of the quantity of Fish forwarded by the Norfolk Railway from Yarmouth during the year 1847, and is principally Herrings, in packages from 20 lbs. to 168 lbs. each, but averaging about 40 lbs. each.

Month, 1847.	TO LONDON.				TO COUNTRY.				TOTAL.			
	Packags.	£	s.	d.	Packags.	£	s.	d.	Packags	£	s.	d.
January	18,691	672	13	7	1,812	64	14	3	20,503	737	7	10
February	8,800	388	10	3	1,081	41	4	3	9,881	429	14	6
March	6,961	351	5	0	1,101	39	9	7	8,062	390	14	7
April	7,495	475	18	0	820	27	7	7	8,315	503	5	7
May	18,838	1,038	14	2	3,415	161	13	3	22,253	1,200	7	5
June	10,586	531	17	11	6,152	347	10	5	16,738	879	8	4
July	8,761	312	8	1	2 104	85	7	3	10,865	397	15	4
August	35,944	1,102	0	6	4,524	168	16	9	40,468	1,270	17	3
September	45,014	1,295	2	4	4,026	165	1	6	49,040	1,460	3	4
October	67,302	2,015	15	0	7,944	389	18	8	75,246	2,455	13	8
November	57,018	1,721	13	8	7,301	406	12	10	64,319	2,128	6	6
December	30,507	919	0	1	3,387	159	7	0	33,894	1,078	7	1
	315,917	10,854	18	7	43,670	2,057	2	10	359,587	12,912	1	5

Leeds and Liverpool Canal.—No. 140.

Traffic in and out of Liverpool in the year 1844.

Toll charged.	Description of Goods.	Tons.
d.		
0¾*	Coals from Wigan, &c. ..... 470,000 tons	....
Free	Manure from Liverpool ..... 160,000 ,,	....
1½	Coke, Iron, Limestone, &c. (dues 1s. per ton any distance)	49,520
0½	Yorkshire Flags	30,000
1½	Cotton and Cotton Waste, Wool, &c.	28,210
1½	Timber (square and round)	9,290
1½	Grain, Malt, Flour, Oatmeal, &c.	7,850
1½	Groceries, Dyewoods, Drysalteries, &c.	40,910
1½	Manufactured Goods and general Merchandise	7,300
	* Will be reduced to ½d. per ton per mile.	
	N.B.—Rents of Coal-yards are now charged 1s. 2d. per square yard. This will be reduced.	173,080
	P.S.—Average rate of Goods from Liverpool to Leeds 1s. per cwt.	

per ton per mile.

A more detailed statement of the traffic on the Leeds and Liverpool Canal for 1845, may be seen in Salt's *Statistics and Calculations*, page 57.

Merchandise Traffic on the Duke of

The following particulars show the Traffic on this old

An Account of the Traffic, on Toll, by sundry persons' boats, on the specified places, in conjunction with the Trent and Mersey Canal,

From the following Places.	To Runcorn.					To Warrington.				To		
	Coal.	Crates.	Iron.	Sundries.	Total Wght. in Tons.	Bricks and Clay.	Iron.	Sundries.	Total Wght. in Tons.	Fire Bricks.	Crates.	Grain, &c.
London.....	..	..	..	..	..	..	..	50	50	..	..	..
Birmingham, Wolverhampton, &c.	Fire	..	2630	..	2630	..	255	87	342	..	..	..
Derby, Nottingham, Shardlow, &c.	brks &	..	..	..	..	..	..	malt 208	208	..	..	4457
Stourport, Stourbridge, &c.	tiles. 320	..	..	111	431	129	130	101	360	956	..	..
Potteries .....coal	79	12167	..	230	12476	..	..	250	250	.	439	..
Wales and Chester ..	..	..	..	..	..	..	160	93	253	..	361	1661
Lawton, Congleton,&c.	..	..	..	..	..	..	..	..	..	.	Cheese.	..
Middlewich and Anderton	..	..	salt 3855	..	3855	..	..	..	..	.	..	..
Preston Brook	..	..	..	65	65	..	..	..	..	..	..	..
TOTAL	320 79	12167	2630 3855	406	19457	129	545	208 581	1463	956	439 361	6118

An Account of the Traffic, on Toll, by sundry persons' boats, on the specified places, in conjunction with the Trent and Mersey Canal,

From the following places	To London	To Birmingham and Wolverhampton.					To Shardlow.			To			
	General Goods	Iron.	Ores.	Slates.	Sundries.	Total Tons.	Slates.	Sundry Goods.	Total Tons.	Clay.	Flints.	China, Chirt, & other Potters' stone.	Copper Ore.
Runcorn	..	60	947	194	60	2261	1607	..	1607	12624	9585	4234	109
Warrington....	33	.	..	..	236	236	..	75	75	..	..	..	..
Lymm	..	..	..	..	..	..	..	..	..	..	..	..	..
Broadheath and Stretford	3	.	..	..	24	24	..	..	..	..	..	..	..
Manchester....	2569	.	..	..	1028	1028	..	910	910	..	..	..	..
Worsley	..	.	..	..	..	..	..	..	..	..	..	..	..
Leigh.....	..	.	..	..	..	..	..	..	..	..	..	..	..
TOTAL	2605	60	947	194	1348	3549	1607	985	2592	12624	9585	4234	109

In addition to the above 39 tons of goods were conveyed from Manchester conveyed from Leigh to Preston Brook, which weight is included in the grand

Bridgewater's Canal.—No. 141.

and important Canal ; see also Salt's "Statistics," p. 57.

the canal of the Trustees of the late Duke of Bridgewater, from and to from Christmas, 1844, to Midsummer, 1845.

Manchester.						To Worsley.						To Leigh.						
Iron.	Potatoes.	Salt.	Timber.	Sundries.	Total Wght. in Tons.	Grain.	Iron.	Salt.	Timber.	Sundries.	Total Wght. in Tons.	Bricks.	Iron.	Salt.	Sundries.	Total Wght in Tons.	Grand Total in Tons.
..	..	..	..	1620	1620	..	..	..	..	24	24	..	..	..	..	..	1694
6820	..	..	..	773	7593	..	1029	..	..	23	1052	.	1001	..	291	1292	12909
..	..	..	..	500	4957	66	..	..	..	..	66	..	..	..	40	40	5271
1820	..	..	..	463	3239	..	306	..	..	..	306	44	274	..	86	404	4740
780	..	..	481	2014	3714	19	..	..	..	48	67	20	..	..	114	134	16641
3127	..	..	440	2309	7898	..	70	..	..	..	70	.	100	..	..	100	8321
..	..	..	..	520	520	..	..	..	..	..	..	..	..	..	..	..	520
..	..	4881	60	36	4977	..	..	460	..	..	460	.	..	2110	..	2110	11402
..	1969	..	..	3357	5326	..	..	..	127	..	127	.	..	..	..	..	5518
12547	1969	4881	981	11592	39844	85	1405	460	127	95	2173	64	1375	2110	531	4080	67016

the Canal of the Trustees of the late Duke of Bridgewater, from and to from Christmas, 1844, to Midsummer, 1845.

Potteries.			To Stourport. &c.	To Chester and Wales.	To Lawton Congltn &c.	Middlewich.	To Anderton.			To Preston Brook, transshipped from Pickfrd&Co.'s & Wheatcroft & Co.'s boats, and conveyed by the Duke's flat to Liverpool.			Grand Total in Tons.
Timber.	Sundries.	Total Tons.	Goods. Tons.	Goods. Tons.	Sundries. Tons.	Sundries. Tons.	Coal.	Coke.	Total Tons.	Gds	block stone	Total Tns.	
44	170	26766	141	..	..	160	..	..	..				30935
.	297	297	32	..	..	..	..	..	..				673
..	..	..	..	..	..	..	..	..	..	..	..	..	..
..	23	23	..	..	..	..	..	..	..	..	..	..	50
..	614	614	929	1055	689	670	..	..	..	2740	1668	4408	12911
..	..	..	..	..	..	..	2262	87	2349	..	..	..	2349
..	..	..	..	..	..	..	6709	..	6709	..	..	..	7102
44	1104	27700	1102	1055	689	830	8971	87	9058	2740	1668	4408	54020

to Preston Brook, thence by waggon to Chester; and 393 tons of coal were total.

Bridgewater Canal—(*Continued.*)

An Account of Freight from and to Liverpool and Preston Brook (in conjunction with the Trent and Mersey Canal) by the Trustees of the late Duke of Bridgewater, for six months, viz., from the 25th December, 1844, to the 25th June, 1845:—

FROM LIVERPOOL TO PRESTON BROOK.

This statement comprises all the goods carried by the Trustees, and which were delivered by them to the various Carriers, who conveyed them to their destination on the Canals between Preston Brook and London.

Clay.	Copper and Tin.	Cotton.	Groceries.	Grain.	Timber.	Wool.	Sundries	Total Weight Tons.	Amount of Freight. £ s. d.
590	199	1531	3819	2306	2630	131	9791	20,997	4545 19 10

TO LIVERPOOL FROM PRESTON BROOK.

Ale.	Copper and Tin.	Crates of Earthenw	Grain.	Hardware	Iron.	Malt.	Salt.	Stone.	Sundries.	Timber.	Total Weight. Tons.	Amount of Freight. £ s. d.
2860	213	2293	21	6339	7703	568	383	*3158	2981	379	26,898	4709 18 5

* This stone was brought from Derbyshire for the building of St. George's Hall, Liverpool.

A Statement of Traffic on the Bridgewater Canal to the specified branches thereof, from and to the London and intermediate Canals (but the trade is chiefly from Birmingham, the iron districts in Staffordshire and Shropshire, and salt from Anderton), *via* Preston Brook, in the year 1845:—

ON TONNAGE.

	Runcorn.	Warrington.	Manchester	Worsley.	Leigh.	Total Weight. Tons.
To the Bridgewater Canal, for	38816	2910	78856	4337	8911	133830
From the Bridgewater Canal, from	70085	small not taken	20580	6808	17172	114645
Total	108901	2910	99436	11145	26083	248475

Bridgewater Canal—(*Continued.*)

A statement of the Tonnage Traffic conveyed from and to Manchester on the Bridgewater Canal, from and to the specified places, for the year 1845 :—

TO MANCHESTER FROM

1845.	London.	Birmingham and Wolverhampton.	Shardlow, and Derby.	Potteries.	Stourport.	Shropshire, Wales, and Chester.	Middlewich & Anderton.	Preston Brook.	Total Weight Tons.
Lady Day..	786	3596	2347	1266	1606	4373	2590	2619	19,183
Midsummer	834	3697	2610	1838	1687	3153	2473	2707	18,999
Michaelmas	398	2968	2408	1940	1161	4344	2960	2196	18,375
Christmas..	307	4111	3669	1325	2448	4647	3041	2751	22,299
Total	2325	14372	11034	6369	6902	16517	11064	10273	78,856

FROM MANCHESTER TO

1845.	London.	Derby, Nottingham, & Shardlow.	Potteries.	Stourport.	Shropshire, Wales, and Chester.	Middlewich & Anderton.	Birmingham and Wolverhampton.	Preston Brook.	Total Weight Tons.
Lady Day....	1319	465	201	438	453	655	389	1460	5380
Midsummer ..	1138	404	279	415	433	493	435	2561	6158
Michaelmas ..	996	450	276	324	316	292	428	1826	4908
Christmas....	573	382	320	296	512	321	263	1467	4134
Total	4026	1701	1076	1473	1714	1761	1515	7314	20,580

An account of Goods, &c., conveyed by the Trustees of the late Duke of Bridgewater, in conjunction with Canal Carriers *via* Preston Brook, from and to the specified places, for the year 1845 :—

Bridgewater Canal—(*Continued.*)

TO LIVERPOOL FROM PRESTON BROOK, transhipped from Boats from—

1845.	London.	Birmingham and Wolverhampton.	Derby, Nottingham, Shardlow, &c.	Potteries.	Stourport.	Shropshire, Chester, and North Wales.	From Manchester via Preston Brook.	Middlewich & Anderton.	Total Weight. Tons.	The Duke's Freight to Liverpool from Preston Brook. £ s. d.
Lady Day ..	268	6292	2832	1399	1823	101	1319	351	14,385	2558 16 2
Midsummer	215	4822	1701	1550	1206	33	2294	702	12,523	2150 9 8
Michaelmas	213	6515	1409	1179	983	83	1698	594	12,661	2054 10 10
Christmas ..	206	5006	1709	1049	1066	97	1425	776	11,334	1968 2 1
Total	902	22635	7651	5178	5078	314	6736*	2422	50,906	8731 18 9

* This portion of traffic was brought to Preston Brook by the Trustees' Flats, and transhipped there into narrow boats belonging to Pickford and Co., and Wheatcroft and Co.

FROM LIVERPOOL TO PRESTON BROOK, and transhipped to—

1845.	London.	Birmingham.	Wolverhampton.	Derby, Shardlow, Nottingham, and Burton.	Potteries.	Stourport.	Shropshire, Wales, and Chester.	Middlewich & Anderton.	Manchester via P. Brook.	Total Weight. Tons.	Amount of Freight. £ s. d.
Lady Day ..	330	1109	605	1621	2959	588	737	538	1445	9932	2228 3 8
Midsummer	425	934	670	2406	3173	382	615	834	1626	11065	2378 10 9
Michaelmas	279	861	1054	2719	3682	491	356	546	1264	11252	2234 1 9
Christmas ..	274	1905	1183	1967	3321	210	281	682	1152	10975	2317 11 0
Total	1308	4809	3512	8713	13135	1671	1989	2600	5487*	43224	9169 7 2

* This traffic was brought from Liverpool and transhipped into carriers' boats for Manchester.

A Statement of the chief articles of the above-mentioned Traffic to and from Liverpool for 1845 :—

To Liverpool.						From Liverpool.			
Ale.	Earthenware.	Hardware.	Iron.	Salt.	Term.	Cotton.	Grain.	Groceries.	Timber.
Tons	Tons	Tons.	Tons.	Tons		Tons	Tons	Tons	Tons
2019	1010	3725	4172	185	.... Lady Day	731	1227	1637	1355
840	1236	2605	3533	197	.... Midsummer	791	1170	2182	1299
333	523	2577	4669	581	.... Michaelmas	562	1731	1995	2496
949	423	2737	3269	734	.... Christmas	448	1667	2120	2809
4141	3192	11644	15643	1697	.. The whole year ..	2532	5795	7934	7959

The Ale to Liverpool is from Burton, and the Earthenware from the Potteries. In addition to this weight of Earthenware, there is annually about 20,000 tons shipped at Runcorn.

Bridgewater Canal—(*Continued.*)

A Report of Traffic on the Bridgewater Canal, *via* Preston Brook, for six years:—

Year	On Tonnage, by Carriers.		On Freight, by the Trustees' own Flats.		Local Trade by the Trustees' Boats.	
	To the Bridgewater Canal.	From the Bridgewater Canal.	To Liverpool	From Liverpool	To Preston Brook.	From Preston Brook.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1840	106,824	89,583	42,372	45,998	16,627	14,246
1841	108,760	97,635	34,607	35,191	9,995	14,042
1842	103,803	87,924	33,977	35,830	8,776	14,736
1843	101,627	81,533	29,880	36,941	9,896	11,997
1844	111,153	94,015	48,695	46,455	10,721	9,634
1845	134,442	115,212	50,906	43,224	13,092	11,081

It may be well to remark, for general information, that the traffic denominated "Local," is chiefly market produce from the countries around Preston Brook to Manchester, and Coals from Worsley and Leigh to Preston Brook.

Railway and Canal Competition.—No. 142.

The Select Committee on Railway Acts Enactments in 1846, state:—

"The Railway Companies have either driven, or must ultimately drive, all competition from other quarters out of the field. Even the canals, which it was thought with proper management might maintain a successful competition with railways in the case of heavy goods, in many instances, as has already been observed, have been beaten by them, and the Report of the Committee on Railway and Canal Amalgamation Bills shows but too clearly that we must prepare ourselves for seeing the canal interest come still more extensively under the influence and control of Railway Companies. This has resulted not merely from the power which the passenger traffic gives the railways of conveying goods at rates at which the canals cannot afford to carry them, but from their obtaining the command of portions of the lines of canals, and raising the tolls of that portion to the utmost limit allowed by law, so that the companies in possession of the remainder of the lines are thereby disabled from maintaining a successful competition."

Contrast of Freight by Steamers and by Rail.

No. 143.

Many persons are deceived by the mode of charging goods by the article or foot, as practised by the steam-packets, and often actually pay more to the packets than a railway would charge at their rate per ton, although a safer and quicker conveyance. The following statement of the actual charge made by a steam-packet company during a short period in 1847, from London to Yarmouth by steamer and thence transhipped and sent by wherry to Norwich, as compared with what would have been charged by the railway throughout at their usual rates, will show an instance :—

Description.	No. of Packages.	Weight.				Actual charge by Steam conveyance.			Charge by Railway conveyance.		
		T.	C.	Q.	lbs.	£	s.	d.	£	s.	d.
Sugar in Hogsheads	24	16	12	1	17	8	14	8	9	13	4
,, Tierces.....	4	1	19	2	8	1	2	0	1	3	1
,, Bags and Mats	36	2	15	1	16	2	4	7	1	12	4
Molasses, Puncheons ..	5	3	9	0	24	1	19	0	2	0	5
Currants, Butts.....	14	4	12	3	16	2	16	6	2	14	3
Raisins.....	730	12	10	3	13	13	0	0	9	8	2
Dried Fruits and Figs ..	283	2	4	3	17	3	10	5	1	15	9
Lemons and Oranges....	12	1	0	1	0	0	16	1	0	15	3
Nuts.....	10	0	16	0	14	0	13	9	0	12	1
Wine, Casks	4	0	6	0	0	0	5	4	0	4	6
,, Hampers.....	4	0	11	1	0	0	15	0	0	17	10
Paper	10	0	16	0	0	0	17	2	1	1	4
Tea	13	0	10	2	17	0	11	2	0	11	9
Candles.....	11	0	15	2	20	1	0	2	0	15	11
Rice	10	1	7	2	21	0	15	0	1	0	8
Butter	60	2	5	3	10	1	15	0	1	6	9
Lard	21	0	17	2	8	0	13	9	0	13	2
Cheese	10	0	6	2	0	0	6	6	0	4	11
						42	16	1	36	11	6

Cost of constructing Railways in England, France, Belgium, and Prussia.—No. 144.

The following Statement is taken from the Second Report of the Committee on Railway Acts Enactments in 1846:—

"Mr. Reed, intimately acquainted with the working of English and French lines, who is confirmed by Mr. Brassey, extensively employed as a contractor in the two countries, states that the cost of earthwork is much the same in England and in France; that the rails and chairs, which on the Southampton line cost 2,790*l.* per mile, cost 4,635*l.* per mile on the Paris and Rouen line; that the working of the former line costs about 1s. a mile, while it is about 1s. 4d. on the Paris and Rouen line; that the locomotive power and the carriages cost about 14½ per cent. on the former and 16½ on the latter; that the general expenses, including officers, police, &c., are about 12 per cent. on the South Western, and about 16 per cent. on the Paris and Rouen; so that in all these respects, England, it would appear, has a considerable advantage over France. On some of the English lines the balance of advantage is still more in favour of England.

"The cost of construction of the Belgian State lines appears to have been very unequal. According to the Report of the Minister of Public Works, the three cheapest State lines were those from Ghent to Courtray, from Ghent to Bruges, and from Landen to St. Trond. The line from Ghent to Courtray cost per mile 6,620*l.*; from Ghent to Bruges, 7,675*l.*; from Landen to St. Trond, 8,990*l.* The three dearest State lines were those from Louvain to Tirlemont, from Liege to the Prussian frontiers, and from Ans to Liege. The line from Louvain to Tirlemont cost per mile 19,957*l.*; from Liege to the Prussian frontiers, 40,797*l.*; from Ans to Liege, 62,325*l.* The average cost of the State lines was 17,132*l.* per mile The items of this average cost are per mile, land and compensation, 2,919*l.*; earthwork, bridges, tunnels, &c., 7,163*l.*; rails, &c., 3,146*l.*; stations and buildings, 1,153*l.*; working stock, 2,201*l.*; miscellaneous, 550*l.*

"The following is the cost of some of the French lines executed and in course of construction:—

	Per Mile.
The Paris and Orleans	£24,390
The Paris and Rouen	23,754
The Strasbourg and Basle	18,485
The Amiens and Boulogne	20,000
The Rouen and Havre	28,300

The Avignon and Marseilles	28,600
The Orleans and Bordeaux	20,830
The Centre	18,050
The North, with Calais Branch	19,900
The Paris and Lyons	24,840
The Lyons and Avignon, with Branch to Grenoble	25,800

"The Austrian line from Olmütz to Prague, 152 English miles, cost 11,657*l.* per mile; that from Brünn to Böhmisch-Trübau, 55 English miles, cost 16,360*l.* per mile.

"The cost of construction of the Prussian lines appears to have been generally lower than that of the Belgian lines. According to the elaborate work of Baron von Reden, the cost of the Berlin and Potsdam line was 12,323*l.*; of the Magdeburg and Leipsic was 10,179*l.*; but the Rhenish line from Cologne to the Belgian frontiers was to cost 28,334*l.* per English mile. This last line, though lower than most of the English lines, is higher than that between Edinburgh and Glasgow by a trifle, and considerably higher than most of the Scotch lines. Mr. Legoyt, a respectable authority, estimates the average cost of the German lines at 170,000 francs per kilometre, or 10,940*l.* per English mile. The Prussian and other German lines pay less for land and law charges than the English lines.

"The following is the cost per mile of some of the principal lines in this country:—

	Average Cost Per Mile.
Arbroath and Forfar	£ 9,214
Chester and Birkenhead	34,198
Dublin and Drogheda	15,652
Dublin and Kingstown	59,122
Dundee and Arbroath	8,570
Durham and Sunderland	14,281
Edinburgh and Glasgow	35,024
Eastern Counties and North-Eastern	46,355
Glasgow, Kilmarnock, and Ayr	20,607
Glasgow and Greenock	35,451
Gravesend and Rochester	13,333
Great Western	43,885
Hartlepool	26,660
London and Birmingham	38,406
London and Blackwall	287,678
London and Brighton	56,981
London and Croydon	80,400

London and South-Western	28,004
Manchester, Bolton, and Bury	70,000
Manchester and Birmingham	61,624
Manchester and Leeds	64,582
Midland	30,949
Newcastle, Darlington, and Brandling	22,992
Newcastle and Carlisle	17,837
Newcastle and North Shields	44,233
Norfolk	13,150
North Union and Bolton and Preston	27,799
Preston and Wyre	22,261
Sheffield and Manchester	48,543
South-Eastern	44,412
Taff Vale	21,610
Ulster	14,334
York and North Midland, &c.	25,924

Railway Accidents in 1847.—No. 145.

By an Analysis of a Parliamentary Return (No. 707) for 1847, it appears that of the 101 persons killed and 100 injured, on all the Railways in Great Britain and Ireland during the six months ending 30th June, 1847, there were—

14 Passengers killed, and	48 injured from causes beyond their own control.
8 Passengers killed, and	3 injured owing to their own misconduct or want of caution.
8 Servants of companies killed and	17 injured from causes beyond their own control.
51 Servants of companies killed and	24 injured owing to want of caution or recklessness.
19 Trespassers killed, and	7 injured.
1 Person killed, and	1 injured while crossing the railway at level crossings, owing to misconduct of servants of company.
101	100

And for the same period the number of passengers amounted to 23,119,412.

Liverpool Dock Duties from 1812 to 1845.—No. 146.

Amount of Dock Duties at the Port of Liverpool, from the year 1812, ending 24th June in each year:—

Year.	Vessels	Tonnage.	£	s.	d.	£	s.	d.
1812	4599	446,788	20,260	3	5	44,403	7	11
		Duties on Goods	24,143	4	6			
1813	5341	547,426	24,134	18	8	50,177	13	2
		Duties on Goods	26,042	14	6			
1814	5706	548,957	28,630	11	3	59,741	2	4
		Duties on Goods	31,110	11	1			
1815	6440	709,849	36,310	1	9	76,915	8	8
		Duties on Goods	40,605	6	11			
1816	6888	774,243	43,765	6	3	92,646	10	9
		Duties on Goods	48,881	4	6			
1817	6079	653,425	35,186	8	0	75,889	16	4
		Duties on Goods	40,703	8	4			
1818	6779	754,690	43,842	16	6	98,538	8	3
		Duties on Goods	54,695	11	9			
1819	7849	867,318	50,042	7	8	110,127	1	8
		Duties on Goods	60,084	14	0			
1820	7276	805,033	44,717	17	10	94,412	11	10
		Duties on Goods	49,694	14	0			
1821	7810	839,848	43,131	6	2	94,556	9	1
		Duties on Goods	51,425	2	11			
1822	8136	892,902	47,229	10	4	102,403	17	4
		Duties on Goods	55,174	7	0			
1823	8916	1,010,819	52,837	5	5	115,783	1	6
		Duties on Goods	62,945	16	1			
1824	10001	1,180,914	60,878	9	7	130,911	11	6
		Duties on Goods	70,033	1	11			
1825	10837	1,223,820	59,446	7	8	128,691	19	8
		Duties on Goods	69,245	12	0			
1826	9601	1,228,318	60,411	9	11	131,000	19	0
		Duties on Goods	70,589	9	1			
1827	9592	1,225,313	61,601	0	6	134,472	14	3
		Duties on Goods	72,871	13	9			
1828	10703	1,311,111	62,969	7	10	141,369	15	7
		Duties on Goods	78,400	7	9			
1829	11383	1,387,957	66,128	18	10	147,327	4	11
		Duties on Goods	81,198	6	1			
1830	11214	1,411,964	68,352	7	5	151,359	15	4
		Duties on Goods	83,007	7	11			
1831	12537	1,592,436	81,039	11	11	183,455	4	3
		Duties on Goods	102,415	12	4			
1832	12928	1,540,057	74,530	4	11	170,047	6	11
		Duties on Goods	95,517	2	0			
1833	12964	1,590,461	79,558	3	11	182,980	16	4
		Duties on Goods	103,422	12	5			
1834	13444	1,692,870	84,061	15	11	191,729	17	8
		Duties on Goods	107,668	1	9			

Liverpool Dock Duties.—*(Continued.)*

Year.	Vessels	Tonnage.	£	s.	d.	£	s.	d.
1835	13941	1,768,426	87,644	14	5	198,637	18	9
		Duties on Goods	110,993	4	4			
1836	14959	1,947,613	97,847	10	10	221,994	10	9
		Duties on Goods	124,146	19	11			
1837	15038	1,958,934	84,596	11	1	173,853	10	1
		Duties on Goods	89,256	19	0			
1838	14820	2,026,206	76,324	11	1	146,290	3	11
		Duties on Goods	69,965	12	10			
1839	15445	2,158,691	81,680	8	5	156,555	1	6
		Duties on Goods	74,874	13	1			
1840	15998	2,445,708	92,221	2	3	178,196	14	0
		Duties on Goods	85,975	11	9			
1841	16108	2,425,461	91,755	10	4	175,506	8	5
		Duties on Goods	83,715	18	1			
1842	16458	2,425,319	93,360	2	0	177,231	15	5
		Duties on Goods	83,871	13	5			
1843	16606	2,445,278	96,445	11	7	188,286	2	1
		Duties on Goods	91,840	10	6			
1844	18411	2,632,712	99,044	13	7	185,164	1	11
		Duties on Goods	86,119	8	4			
1845	20521	3,016,531	118,046	8	8	223,247	4	5
			105,200	15	9			

GEORGE WITHERS, Treasurer.

Dock Office, Liverpool, 24th June, 1845.

N.B.—The calculated Reduction of the Dock Rates, which took place on the 25th September, 1836, was about 38½ per cent.

Property destroyed by Railway Schemes in 1845.

No. 147.

In the evidence before the Select Committee on Railway Acts Enactments in 1846 :—

"Mr. Robert Stephenson, by way of illustrating the inconvenience of the present system, stated in his evidence that he could 'quote a case at Wisbeach, where, within half a mile of that town, there were actually fourteen different schemes, intersecting the land in every possible direction, hedges cut down, and crops interfered with. Now, all the legal expenses and the expenses of engineers and surveyors have been thrown away, because only one act has been obtained. When they come before Parliament it is impossible to convey to the members of this committee a correct notion of the difficulties which the committee must have to wade through in coming to anything like a true decision,'"

Trade and Navigation of France, in 1844, 1845, and 1846.—No. 148.

The "Times" newspaper of 2nd July, 1847, says:—

"The 'Moniteur' publishes the following comparative returns of the principal results of the trade and navigation of France with her Colonies and Foreign Powers during the years 1844, 1845, and 1846:

GENERAL COMMERCE.

Number of vessels laden.

IMPORTS.

	1844.	1845.	1846.
French vessels....	6,392	6,920	8,184
Foreign ditto	10,070	10,775	12,113
Total	16,462	17,693	20,297

EXPORTS.

French vessels....	5,369	5,739	5,595
Foreign ditto . ..	6,396	6,813	6,623
Total.....	11,765	12,552	12,218

TONNAGE.

IMPORTS.

	Tons.	Tons.	Tons.
French vessels....	679,066	746,310	879,808
Foreign ditto	1,357,789	1,439,320	1,680,290
Total.....	2,036,855	2,185,630	2,560,098

EXPORTS.

French vessels....	577,032 .. .	651,670	654,972
Foreign ditto	674,101	734,822	709,806
Total.....	1,251,133	1,386,492	1,364,778

OFFICIAL VALUE.

IMPORTS.

	Francs.	Francs.	Francs.
French vessels....	378,200,000	399,500,000	425,600,000
Foreign ditto	454,100,000	474,000,000	468,500,000
Total.....	832,300,000	873,500,000	894,100,000
By land.....	360,600,000	366,600,000	363,300,000
Total.....	1,192,900,000	1,240,100,000	1,257,400,000

Trade and Navigation of France.—(*Continued.*)

	1844.	1845.	1846.
	EXPORTS.		
French vessels....	385,400,000	403,500,000	403,600,000
Foreign ditto	440,500,000	454,700,000	456,100,000
Total	825,900,000	863,200,000	859,700,000
By land.....	320,900,000	324,200,000	318,500,000
Total.. ...	1,146,800,000	1,187,400,000	1,178,200,000
	SPECIAL TRADE.		
Imports	867,400,000	856,200,000	933,000,000
Exports	790,400,000	848,100,000	851,000,000

Isle of Man.—No. 149.

The following shows the number of vessels entering each port of the Isle of Man, from 1826 to 1845, and is taken from a Parliamentary Return (No. 48.—II.) for 1847 :—

YEARS.	Darby Haven Vessels	Douglas Vessels.	Peel Vessels.	Ramsay, Port Douglas Vessels.	Total Vessels.
1826....	272	463	153	180	1,068
1827....	256	373	114	163	906
1828....	252	442	102	161	957
1829....	281	663	120	152	1,216
1830....	287	439	125	173	1,024
1831....	283	430	113	194	1,020
1832....	337	478	134	237	1,186
1833....	283	499	131	210	1,123
1834....	316	585	147	201	1,249
1835....	300	586	130	176	1,192
1836....	286	548	126	177	1,137
1837....	314	615	158	175	1,262
1838....	300	580	126	192	1,198
1839....	339	632	143	209	1,323
1840....	366	582	146	255	1,349
1841....	320	551	150	250	1,271
1842....	343	588	161	229	1,321
1843....	343	550	139	219	1,251
1844....	349	408	120	256	1,133
1845....	378	671	127	359	1,535
Total	6,205	10,683	2,665	4,168	23,721

Powerful Engine for working bad Gradients.

No. 150.

To overcome the difficulty of ascending the Lickey Incline, on the Bristol and Birmingham Railway, the Locomotive Superintendent, Mr. J. M'Connell, designed and constructed at Bromsgrove the "Great Britain" engine, which was of the following dimensions, and has been very successful to the present time (1847):—

	Feet.	In.
Diameter of cylinders	0	18
Length of stroke	0	26
Diameter of each of the six wheels	0	45
Distance from centre to centre of front wheels	6	9¾
Ditto ditto hind wheels	6	11
Length of boiler	12	0
Length of tank over boiler	11	9
Breadth of ditto	3	7
Depth of ditto	2	7
Distance from centre to centre of cylinders	6	2
Length of tubes (No. 134)	12	6
Diameter of ditto	0	2
Diameter of piston rods	0	3
Diameter of pump rams	0	2½
Breadth of shell of fire-box	4	4½
Length of ditto, outside	3	11¾
Height from bottom to top	6	3
Height of lower edge of cylinder	2	0
Length of chimney	6	9
Circumference of ditto	5	6
Total weight of engine 30 tons		
Weight on front wheels 9 tons		
Weight on centre wheels 12 tons		
Weight on hind wheels 9 tons		
Height of smoke-box	6	1½
Width of ditto	4	10
Diameter of boiler cylinder vertically	3	10
Ditto ditto horizontally	3	9

Width of Wide and Narrow Gauge Railways.

No. 151.

In the Gauge Evidence, 25th October, 1845, Mr. J. K. Brunel says :—

"For instance, on the Liverpool and Manchester Railway, the gauge being 4 ft. 8½ ins., and they having determined to put also 4 ft. 8½ ins. between the two rails, the total width capable of being occupied by each train, without allowing any space between, would be of course twice 4 ft. 8½ ins., plus 2½ ins, I will call the 4 ft. 8½ ins. in round figures 5 ft. Therefore that gives 10 feet as the space in the air that is devoted to each railway. The London and Birmingham added a foot to that, making it 11 feet. In constructing the Great Western Railway, following out somewhat the same principle that had led me to widen the gauge, I also increased the space occupied by each railway to 13 feet; putting therefore 6 feet between the two railways, and 7 feet for each railway. This width of 13 feet, which is the width of each railway on the Great Western, is not rendered necessary by the 7 feet gauge. The 7 feet gauge might exist with a 10 feet space for the railway. But having increased the space from 10 to 13, it of course gave a greater total width for the works of the Great Western Railway than for those required for the London and Birmingham. But as I said before, I believe that with the exception of some of the tunnels upon the London and Birmingham Railway, the widths are much the same as the Great Western,"

Railways sanctioned in 1847.—No. 152.

From a Parliamentary Return of 1847 (No. 22), the following is a summary, but it must be observed that there were many Acts passed for deviations, which are not included unless they are longer than the original line, and 30 other Acts were passed for other Railway purposes :—

	Miles.	Furlongs.	Chains.
Length of Line	1,353	6	3¾
Amount of Capital Stock	£25,695,257		
Amount of Capital Subscribed	£11,702,951		
Sum of Money empowered to borrow	£13,764,871		

Comparison of the Great Western and London and Birmingham Railway.—No. 153.

In the Appendix to the Report of the Gauge Commissioners in 1846, is given the following :—

"Table exhibiting the expenditure of the Great Western and London and Birmingham Railways, for locomotive engines, carriages and waggons, from the commencement of the traffic to the present time; also the revenue returns of each for the last two years, and the expense of locomotive power, as deduced from the half-yearly reports of each Company.

	£	s.	d.
Great Western.—Total cost of locomotive engines, tenders, carriages, and waggons, to 30th June, 1845	622,078	12	0
London and Birmingham.—Total cost of locomotive engines, tenders, carriages and waggons, to 30th June, 1845	494,403	5	3
These sums are exclusive of the charges for locomotive, carriage and waggon repairs, included in the half-yearly accounts. These latter have amounted in the last two years to—			
Great Western.—From 1st July, 1843, to 30th June, 1845	56,932	17	9
London and Birmingham.—From 1st July, 1843, to 30th June, 1845	57,578	8	5
The cost of locomotive power, including repairs of locomotive engines, coal, coke, wages, and all incidental charges, have amounted in the same period to—			
Great Western.—From 1st July, 1843, to 30th June, 1845	155,902	2	0
London and Birmingham.—From 1st July, 1843, to 30th June, 1845	146,172	3	3
The revenue for the same two years, for the carriage of passengers, mails, goods, &c.—			
Great Western.—From 1st July, 1843, to 30th June, 1845	1,617,995	8	2
London and Birmingham.—From 1st July, 1843, to 30th June, 1845	1,735,795	14	3
The total mileage of every passenger for the last two years, amounts to—			

Great Western.—Total mileage from 1st July, 1843, to 30th June, 1845..... 128,524,232

London and Birmingham.—Total mileage from 1st July, 1843, to 30th June, 1845..... 121,529,606

	Great W.		Lon. Bir.
Ratio of cost of engine and carriage plant	1	to	·763
Ditto of repairs of do. for two years	1	to	1·011
Ditto of cost of locomotive power for do.	1	to	·949
Ditto of passengers mileage for do.	1	to	·945
Ditto of total passengers revenues for do.	1	to	1·072

During the periods which these returns embrace, the lengths of line worked by the Great Western have varied by the opening of different lines and branches; but from 30th December, 1844, to June 30th, 1845, the number of miles worked have been constant, viz., 222 miles. The length worked by the London and Birmingham have also been constant during the same period, and Mr. Creed in his evidence states (excluding the branches) that the distance worked was 113 miles, and the revenue and mileage on this length, that is still excluding the branches, he gives as below.

Similar statements are given in the Appendix of the revenue, mileage, &c., on the Great Western for a like period; from which we have the following comparisons:—

Great Western, length of line worked	222	miles.
London and Birmingham do.	113	,,
Great Western, total passengers mileage	35,967,713	,,
London and Birmingham do.	38,758,260	,,
Great Western, miles run by passenger trains	761,483	,,
London and Birmingham do.	456,526	,,
Great Western, average number of passengers per train	47·2	
London and Birmingham do. do.	84·9	
Great Western, average passengers revenue per trains per mile	9s.	0d.
London and Birmingham do. do.	14s.	9d.

Canal Tolls reduced by Railways.—No. 154.

The Railway Shareholders' Manual, published in 1847, says:—

"The distance between Manchester and Hull is 99 miles; before the railway was opened, the chief traffic was carried on by canals. The freight for corn and flour was 24s. per ton, cotton twist 32s. 6d.

per ton, and manufactured goods 45s per ton. The Manchester and Leeds Railway now carry corn and flour for 13s. per ton, cotton twist for 20s. per ton, and manufactured goods for 24s. per ton. On the Trent and Mersey Canal, the freight for coal was 1s. 2d. per ton per mile; it is now reduced to one halfpenny per ton, per mile. The following Tables of reduced tonnages in the Midland district, are equally interesting:—

STATEMENT of REDUCED TONNAGES on CANALS, showing the advantages which the Public have derived by Competition between Railways and Canals.

Tonnage on the undermentioned Lines of Canal.	Rates which they were entitled under their Acts to charge, and which they did charge.			Reduced since 1836 to		
	£	s.	d.	£	s.	d.
Grand Junction, 97 miles:—						
On Sundries	0	16	3¾	0	2	0¾
On Coal	0	9	1	0	2	0¼
Grand Union, 24 miles:—						
On Sundries	0	6	0	0	0	5⅛
On Coal	0	2	11	0	0	5⅛
Union, 19 miles:—						
On Sundries	0	4	9	0	0	5½
On Coal	0	2	1	0	0	5½
Leicester, 16 miles:—						
On Sundries	0	2	6	0	0	4
On Coal	0	1	2	0	0	4
Loughboro', 10 miles:—						
On Sundries	0	2	6	0	0	4
On Coal	0	1	2	0	0	4
Erewash, 11 miles:—						
On Sundries	0	1	0	0	0	4
On Coal	0	1	0	0	0	4

London to Leicester by Canal is 139 miles; London to Birmingham by Canal is 144 miles. Whole Tonnage from London to Leicester, 2s. 10¾d.; whole Tonnage from London to Birmingham, about 7s.

Inland Canals.	Present Cost by Canal.			Cost by Railway.		
	£	s.	d.	£	s.	d.
COALS:—						
Melton Mowbray to Stamford	0	9	0	0	2	7
Ditto to Uppingham	0	7	0	0	3	5
Ditto to Oakham	0	3	0	0	1	2
CORN:—						
Stamford to Melton Mowbray	0	10	0	0	3	0
Oakham to ditto	0	5	0	0	1	7

Post-office Letters unclaimed.—No. 155.

From a Parliamentary Return (No. 713), 1847, I extract the following particulars of letters then lying in the General Post-office, London, and not owned:—

"4,201 letters containing in coin £310 9s. 7d.; £1,010 in Bank Notes; £40,410 5s. 7d. in Bills of Exchange, and many other sundry articles of various descriptions. There are also 346 letters containing Money Orders, amounting to £407 12s. 8d.—In the Edinburgh Post-office, on the 5th January, 1847, there were 89 letters containing £4 16s. 1d. in coin; £13 10s. in Bank Notes; £10 in Bills of Exchange, and sundry articles; also 5 letters containing Money Orders for £3 17s. 9d.—In Dublin Post-office, on the 1st May, 1847, there were 457 letters containing £24 19s. 6½d. in coin; £100 in Bank Notes; £642 9s. 11d. in Bills of Exchange, and sundry articles; also 64 letters containing Money Orders for £38 14s. 9d.—After the usual means have been adopted to find the owners, but without success, at the expiration of three years the amount is placed to the Post-office revenue.

Turnpike Trusts in 1845.—No. 156.

The following abstract from a Parliamentary paper (No. 695) published in 1847, will shew the Income and Expenditure of the Turnpike Trusts, for twelve months ending 31st December, 1845:—

	England. 40 Counties.	Wales. 12 Counties.	TOTAL.
	£ s. d	£ s. d.	£ s. d.
Balance in Treasurer's hand 1st of January, 1845	302,121 7 10	13,135 15 9	315,257 3 7
Balance due to the Treasurer 1st of January, 1845	59,393 2 11	2,855 12 10	62 218 15 9
INCOME.			
Revenue received from Tolls	1,260,421 17 2	62,468 5 9	1,322,890 2 11
Parish Composition in lieu of Statute Duty	23,793 13 8	3,611 9 9	27,405 3 5
Estimated value of Statute Duty performed	5,381 17 7	170 0 0	5,551 17 7
Revenue from Fines	286 13 8	35 15 4	322 9 0
Revenue from Incidental Receipts	33,461 15 4	4,265 18 5	37,727 13 9
Amount of Money borrowed on the Security of the Tolls	34,389 6 2	3,758 10 0	38,147 16 2
Total Income	1,357,735 3 7	74,309 19 3	1,432,045 2 10

Turnpike Trusts.—*(Continued.)*

	England. 40 Counties.	Wales. 12 Counties.	TOTAL.
EXPENDITURE.	£ s. d.	£ s. d.	£ s. d.
Manual Labour	292,603 15 7	20,274 13 0	312,878 8 7
Team Labour & Carriage of Materials	125,562 11 7	3,124 2 11	128,686 14 6
Materials for Surface Repairs	184,032 11 9	11,881 18 0	195,914 9 9
Land purchased	4,101 4 10	37 10 0	4,138 14 10
Damage done in obtaining Materials	6,660 3 4	176 4 2	6,836 7 6
Tradesmen's Bills	48,475 15 2	1,788 14 11	50,264 10 1
Salaries of Treasurers	5,619 12 2	215 19 0	5,835 11 2
„ Clerks	23,752 10 6	1,625 12 6	25,378 3 0
„ Surveyo s	56,109 6 8	3,160 18 8	59,270 5 4
Law Charges	23,049 11 8	448 5 6	23,497 17 2
Interest of Debt	263,813 2 2	18,625 19 3	282,439 1 5
Improvements	58,653 6 7	4,2.2 7 6	62,875 14 1
Debts paid off	149,509 14 5	6,387 5 9	155,897 0 2
Incidental Expenses	48,850 7 11	3,833 4 9	52,863 12 8
Estimated value of Statute Duty performed	5,381 17 7	170 0 0	5,551 17 7
Total Expenditure	1,296,175 11 11	75,972 15 11	1,372,148 7 10
DEBTS.			
Bonded or Mortgage Debts	6,524,168 12 2	440,790 16 1	6,964,959 8 3
Rate of Interest, per cent.	....	....	....
Floating Debt	169,197 2 4	4,087 5 9	113,284 8 1
Unpaid Interest	1,383 982 16 5	23,822 12 7	1,407,805 9 0
Balance due to Treasurer 31st of December, 1845	42,770 11 2	3,044 11 8	45,815 2 10
Total Debts	8,060,119 2 1	471,745 6 1	8,531,864 8 2
ARREARS OF INCOME.			
Arrears of Toll for current year	16,921 2 5	554 16 10	17,475 19 3
Arrears of Parish Composition for current year	3,886 7 0	28 0 0	3,914 7 0
Arrears of other Receipts for current year	3,139 18 4	32 7 2	3,172 5 6
Arrears of former years	20,516 3 9	1,769 10 7	22,285 14 4
Balance in Treasurers' hands 31st of December, 1845	317,058 7 9	11,661 17 11	358,720 5 8
Total Assets	391,521 19 3	14,046 12 6	405,568 11 9

Cost of working a Train at 40 or 16 Miles an hour.—No. 157.

In the Appendix to the Gauge Commissioners' Report in 1846, page 347, Mr. J. Locke says—

"I should think it will cost about one-third more to work a train at 40 miles an hour than at 16."

Coals Exported in 1840 to 1846.—No. 158.

Parliamentary Return, No. 520, 1847, supplies the following abstract:—

"Abstract of the Number of Ships laden with Coals, Cinders, and Culm entered Outwards at the several ports of the United Kingdom, in the years 1840, 1841, 1842, 1843, 1844, 1845 and 1846 respectively.

	IN BRITISH SHIPS.				
YEARS.	Number of Ships.	Coals.	Cinders.	Culm.	Amount of Duty.
		Tons.	Tons.	Tons.	£ s. d.
1840....	5,275	1,081,118	10,006	8	1,539 16 1
1841....	6,138	1,231,250	9,480	1	1,899 1 9
1842....	6,783	1,343,692	15,917	526	28,806 0 4
1843....	6,344	1,220,465	28,860	1,434	87,848 19 7
1844....	5,954	1,085,315	35,758	4,241	73,655 1 0
1845....	7,043	1,421,314	53,314	932	9,768 16 6
1846....	7,223	1,490,990	51 408	1,214	....

	IN FOREIGN SHIPS.				
YEARS.	Number of Ships.	Coals.	Cinders.	Culm.	Amount of Duty.
		Tons.	Tons.	Tons.	£ s. d.
1840....	3,820	403,797	3,857	135	5,559 8 3
1841....	3,939	466,971	5,716	....	9,720 4 1
1842....	3,497	463,313	6,919	720	28,509 0 8
1843....	3,777	493,329	5,801	1,918	43,877 8 6
1844....	4,095	506,580	9,428	2,513	40,525 2 7
1845....	5,546	780,492	24,612	90	7,119 8 9
1846....	5,578	799,930	19,161	2,350	1,364 8 4

Duties of Customs in 1845 and 1846.—No. 159.

A Parliamentary Return (No. 676) for 1847, gives the following Abstract of the Net Annual Produce of the Duties of Customs on all articles imported into the United Kingdom in the two years 1845 and 1846 :—

Articles producing annually, under the operation of the Tariff subsisting at the close of 1846 :—	Articles in a raw state to be used in manufactures.			Articles partially manufactured.			Articles wholly manufactured.			Articles of Food.			Articles not properly belonging to any of the foregoing Heads.			TOTAL.		
	Number of Articles	Net Receipt of Duty.		Number of Articles	Net Receipt of Duty.		Number of Articles	Net Receipt of Duty.		Number of Articles	Net Receipt of Duty.		Number of Articles	Net Receipt of Duty.		Number of Articles	Net Receipt of Duty.	
		In 1845.	In 1846.		In 1845.	In 1846.		In 1845.	In 1846.		In 1845.	In 1846.		In 1845.	In 1846.		In 1845.	In 1846.
		£	£		£	£		£	£		£	£		£	£		£	£
Less than £100 each of Duty ..	3	39	58	5	75	73	93	2,919	1,841	26	672	726	8	299	290	135	4,004	2,988
From £100 to £500	1	206	200	8	1,889	1,527	28	9,195	8,092	16	6,457	4,446	6	1,874	1,412	59	19,621	15,677
„ £500 to £1,000	—	—	—	2	1,944	1,076	14	10,737	10,046	6	8,401	3,960	—	—	—	22	21,082	15,082
£1,000 to £10,000	—	—	—	6	25,290	18,182	29	116,767	108,721	26	61,512	73,466	7	19,354	16,983	68	222,923	217,352
£10,000 to £50,000	1	47,830	52,003	1	15,663	13,994	5	128,957	107,420	8	143,282	170,923	1	12,479	11,468	16	348,211	355,808
£50,000 to £100,000	2	245,088	143,945	—	—	—	—	—	—	3	296,913	245,818	1	70,431	89,271	6	612,432	479,034
£100,000 and upwards each	1	406,988	578,766	1	624,588	530,235	1	323,598	235,377	12	18,792,924	19,923,923	—	—	—	15	20,148,098	21,268,301
Articles exempted from duty, or prohibited by the Tariff of '46	263	110,530	1,676	76	19,586	549	34	35,159	1,342	35	23,656	4,097	129	12,114	48	537	201,045	7,712
TOTAL	271	810,681	776,648	99	689,035	565,636	204	627,332	472,839	132	19,333,817	20,427,359	152	116,551	119,472	858	21,577,416	22,361,954

Railways between London and Manchester in 1845.—No. 160.

During the Mania in 1845, the following Ten Schemes were projected to shorten the distance between London and Manchester, and many persons were very severe sufferers by them, only one, the North Staffordshire, obtained an Act.

Names of Railways.	No. of Shares.	Value of Shares. £	Capital. £
Churnet and Blythe.....	50,000	25	1,250,000
North Cheshire.....	20,000	50	1,000,000
Tean and Dove.....	72,000	25	1,800,000
South Union	75,000	20	1,500,000
North Staffordshire, &c.....	100,000	20	2,000,000
Manchester Direct (Remington's)	100,000	50	5,000,000
Manchester Direct (Ashurst's).	100,000	50	5,000,000
Rugby, Derby, and Manchester	60,000	25	1,500,000
Staffordshire Potteries, and Liverpool and Manchester Direct.....	96,000	25	2,400,000
Manchester and Rugby Direct..	85,000	20	1,700,000
	758,000		£23,150,000

Omnibuses in London in 1847.—No. 161.

The total number of omnibuses now traversing the streets of London, is 1,490, giving employment to nearly 4,000 hands. The earnings of these vehicles vary very much, on some roads being as high as £4 per day, and on others as low as £2; but, taking the lowest average, we shall then find that there is spent in omnibus rides, in and around the metropolis, the large sum of £2,980 per day, or £1,087,700 per annum. Persons can be now conveyed as great a distance for 6d. as would have formerly cost five times the amount; besides, the whole system is so regulated that there is a comfortable means of conveyance, ready at all hours, from eight o'clock in the morning till twelve o'clock at night, to all parts of the metropolis, and for miles beyond it in every direction, and in an advertisement of a coffee-house in Fleet-street it is stated that 2969 omnibuses pass and repass daily.

Railway Deposits in 1845 and 1846.—No. 162.

1845.

Total amount paid to the Court of Chancery in England, on account of Railway Companies applying for Acts in the year 1845.....	£ 3,444,306	5	0
Total amount paid to ditto for Ireland	373,812	10	0
Total amount paid to ditto for Scotland	180,763	15	0
Gross Total	£ 3,998,882	10	0

1846.

Total amount paid to the Court of Chancery in England, under Standing Orders of the House of Commons, on account of Railway Companies applying for Acts in the year 1846	£11,396,783	9	10
Total amount paid to the Court of Chancery in Ireland, on account of Irish Railway Companies applying for Acts in the year 1846.....	928,663	10	0
Total amount paid to the Court of Exchequer in Scotland, on account of Scotch Railway Companies applying for Acts in the year 1846....	2,323,371	10	0
Gross Total.....	£ 14,648,818	9	10

Miles of Railway of each Gauge in 1846.—No. 163.

Statement of the number of Miles of Railway completed and in progress in the United Kingdom; specifying the different Widths of Gauge:—

Sanctioned previous to 1844—	Miles.
Wide Gauge of Seven Feet	274
Six Feet Two Inches (intended to be altered to 5 feet 3 inches—Ulster)	25
Five Feet Three Inches (Dublin and Drogheda)	32
Five Feet Six Inches (intended to be altered to 4 feet 8½ inches—Arbroath and Forfar and Dundee and Arbroath)	32
Four Feet Eight-and-a-half Inches	1,901
Total miles previous to 1844	2,264

Sanctioned in 1844—	
Seven Feet Gauge	63
Five Feet Three Inches (Ireland)	122½
Four Feet Eight-and-a-half Inches	602¼
Total miles sanctioned in 1844	787¾
Sanctioned in 1845—	
Seven Feet Gauge	491½
Five Feet Three Inches (Ireland)	644¼
Four Feet Eight-and-a-half Inches	1,611
Total miles sanctioned in 1845	2,746¾
Sanctioned in 1846—	
Seven Feet Gauge	385¾
Five Feet Three Inches (Ireland)	673½
Four Feet Eight-and-a-half Inches	3,465
Total miles sanctioned in 1846	4,524¼

Totals of Miles sanctioned in the United Kingdom—		
Seven Feet, or Broad Gauge	1,214½	Miles.
Five Feet Three Inches, or Irish Gauge	1,497¼	,,
Four Feet Eight-and-a-half Inches	7,611¼	,,
Total	10,322¾	,,

Railway Capital increased by the issue of New Shares.—No. 164.

In the Second Report from the Committee on Railway Acts Enactments in 1846, it is stated:—

"Mr. Hudson, a member of your committee, specified several instances, in companies with which he was connected, where large additions were made to the nominal capitals by these and other means. For instance, he states that by an arrangement between the Great Northern and the Great North of England Railway, it was stipulated that the latter should receive 10 per cent. on every 50*l.* share till 1851, when they had a claim to be paid off in 4 per cent. stock at 250*l.* a share; thus creating a new nominal capital of 250*l.* for every 50*l.* He states also that, to meet a purchase by the Newcastle and

Darlington Company, new 25*l.* shares were issued to the proprietors at par, when they were at a premium of 20*l.* It is obvious that the money required could have been obtained by a much smaller issue of shares, had the 20*l.* premiums, as well as the 25*l.* shares, been applied to the purposes of the company, and not divided as a bonus among the proprietors.

"This practice of swelling the nominal amount of stocks beyond the actual outlay on the lines, which has extensively prevailed, was recently noticed in Reports presented by Mr. Ellice from the Select Committee on Group (58) of Railway Bills, in which it is stated that in the Hull and Selby Purchase Bill the actual outlay and estimates for further works is 955,363*l.*, while the money to be raised by the bill is two millions, exceeding the outlay and engagements of the Hull and Selby proprietors by the large sum of nearly a million, and that in the Great North of England Railway Purchase Bill, the actual outlay and estimate for additional works is 1,496,796*l.* 18s. 4d., the proposed capital 4,000,000*l.*, exceeding the actual outlay and engagements of the Great North of England proprietors by the sum of 2,503,003*l.* 1s. 8d."

Time required for transhipping Goods in London.

No. 165.

In the appendix to the Gauge Commissioners' Report, Mr. T. C. Mills, in a letter dated 19th September, 1845, and referring to the Camden station in London, says:—

"At 1 p.m. 16 waggons arrived in their shed from Manchester, which they instantly commenced unloading, the men and road waggons being in attendance purposely for them. These were all unloaded, and the contents of 10 of them reloaded into their road waggons in 1 hour and 40 minutes. From 1 to 2 o'clock there were 49 men employed at the work; and from 2 o'clock to 2 40, eight more men were employed, making a total of 57 men. The loading consisted entirely of Manchester packs or bales, well packed and corded, and weighing from 1 to 4 cwt. each, which were all removed by cranes, two of the cranes being worked by engine power; the packages were of that nature that no risk was run of damage in removing them rapidly."

Expense of laying Wide Gauge Railways.—No. 166.

Mr. Brunel, in the Gauge Evidence published in 1846, at page 367, gives the following estimate:—

"Estimate for one mile of double line of Rails upon Continuous Bearings similar to the Cheltenham and Great Western Railway and Oxford Branch.

		£	s.	d.
Timber:—				
Longitudinals	5280 ft. $14\frac{1}{2}$ X $7\frac{1}{8}$ X 4, say 320 loads			
Transoms, No. 880	6′ 6″ X 7 X 5 } say 30			
„ 220	6′ 0″ X 7 X 5 }			
	350 loads..	1487	10	0
Joint plates	1650, 1 ton 2 cwt., at £8	8	16	0
Strap bolts 2200				
Small ditto 2200				
Washers (large) 2200	7 tons 15 cwt., at £14	108	10	0
Ditto (small) 2200				
Nails 8890				
Rails, 7040 yards, at 70 lbs. per yard, 220 tons, at £8..		1760	0	0
Fang bolts, 14,200, 3 lbs. each, 19 tons, at £14		266	0	0
Screws, 10 in each rail, 100 gross, at 22s.....		110	0	0
Joint plugs, 1376, at 11s. per 100		7	0	0
Hard wood, 31 loads, at 85s		131	15	0
Grease.....		27	0	0
Laying £400, load of materials, 600 tons, say £200....		600	0	0
Contingencies		100	0	0
		£4606	11	0

Estimate for adding *one* Timber and *one* Rail to each Line for 1 Mile.

	£	s.	d.
Timber, 160 loads, at 85s.....	680	0	0
Hard wood, $15\frac{1}{2}$ loads, at 85s.	64	0	0
Rails, 3520 yards, at 70 lbs., 110 tons, at £8	880	0	0
Joint plates, 11 cwt., at 8s.	4	8	0
Screws, 50 gross, at 22s.....	55	0	0
Fang bolts, 7100, 9 tons 10 cwt., at £14	133	0	0
Joint plugs, 688	3	10	0
880 through bolts $3\frac{1}{2}$ feet X $\frac{7}{8}$ inch, with washers 9 lbs. each, 3 tons 10 cwt., at 14s.	49	0	0

Grease, creosote, &c.	14	0	0
Laying £200., load of materials, about 300 tons, £100	300	0	0
Contingencies	100	0	0
	£2282	18	0

Estimate for adding *two* Timbers and *two* Rails to each Line for 1 Mile.

	£	s.	d.
Timber, 320 loads, at 85s.	1360	0	0
Hard wood, 31 loads, at 85s.	131	15	0
Rails, 7040 yards at 70 lbs., 220 tons, at £8	1760	0	0
Joint plates, 1 ton 2 cwt., at £8	8	16	0
Screws, 100 gross, at 22s.	110	0	0
Fang bolts, 14,200, 19 tons at £14	266	0	0
Joint plugs, 1376 at 11s. per 100	7	0	0
1760 through bolts 2½ feet long, with washers 6½ lbs. each, 5 tons 5 cwt., at £14	73	10	0
Grease, &c.	28	0	0
Laying	300	0	0
Load of Materials, about 600 tons	200	0	0
Contingencies	100	0	0
	£4345	1	0

Liverpool and Manchester Railway difficult to Start.—No. 167.

At a meeting in Manchester, on Tuesday the 15th of June, 1847, to present a Service of Plate to J. P. Westhead, Esq., Chairman of the Manchester and Birmingham Railway, Mr. George Stephenson said—

"He felt gratified in being placed in the position in which he then was, when he looked back to the time when he had few supporters in bringing out the railway system—when those few knew nothing about railways—when *he sought England over* for a man to support him in his evidence before Parliament, *and could find only one man*, James Walker, and was *then* afraid to call *that* gentleman, because *he* knew nothing about railways That gentleman and Mr. Rastrick then recommended that 80 *ropes* should be applied between Manchester and Liverpool—that there should be 20 *stationary engines*—and

that there should be 4 ropes for each engine, it being a double line of way. *He* (Mr. Stephenson) had then *no one* to tell his tale to but Mr. Sandars, of Liverpool, who *did listen* to him, and kept his spirits up. He (Mr. Stephenson) had many times said that he would leave the place (*i.e.* the country) if he could not carry his schemes out; but they *had* been carried out *by perseverance*, and he was indeed proud to be placed in the position in which he then was that day in Manchester, *the most scientific town in the world*. The manufactories of the Continent passed into the shade when compared with those of Manchester; and while the men of Manchester had manufactured goods for the whole world, he (Mr. Stephenson) had provided horses for them, and he hoped that the two would still continue to go together."

Parliamentary Expenses in obtaining Railway Acts.—No. 168.

The following remarks are made by the Committee on Railway Acts Enactments in 1846:—

"Some idea may be formed of the magnitude of the sums absolutely wasted in this country, before Bills can pass through Committees, from a Return just made by the Eastern Counties Railway Company to an Order of the House. The line, which is 51 miles in length, cost £45,190 in Parliamentary expenses. The other preliminary expenses, such as cost of engineering, &c., amounting to £48,650, are separately stated. The Parliamentary expenses of the London and Birmingham have been stated at £650 per mile; of the Great Western at £1,000 per mile. No wonder that foreigners hold up their hands in astonishment when they hear of this enormous waste. The sums paid for land by the Eastern Counties amounted to £809,950, or about £12,000 per mile, alone exceeding the whole cost per mile on most of the German lines, and on several of the Belgian. The London and Birmingham and the Great Western paid £6,300 each per mile for lands. In the case of the Rouen and Havre line, Mr. Reed states that £6,000 was paid to three gentlemen who made considerable exertions to obtain the Act, but that the expenses incurred in the inquiry before the Board, and up to the time the Act was obtained, amounted in all only to £700."

Railway Newspapers in 1846.—No. 169.

"STAG NEWSPAPER.—It is stated of the *Iron Times*, which expired recently during a great mortality amongst railway newspapers, that, in order to keep the concern going till a change should take place in the market, the same number was brought out day by day for a month, three copies only being printed off each time."—*Liverpool Mercury*, 17th July, 1847.

Passengers by the London and North-Western Railway, from Manchester, &c., during Whitsun Week, 1847.—No. 170.

Number of Scholars conveyed to the under-mentioned stations, during Whitsun Week, 1847 :—

May, 1847.	From	To Longsight.	To Adlington.	To Prestbury.	To Wilmslow.	To Alderley.	To Chelford.	Total each Day.
Tuesday 25th	Stockport	250	..	..	..	..	..	250
Wednesday 26th	Manchester ..	..	380	..	..	..	..	380
Ditto 26th	Handforth	..	..	..	..	130	..	130
Thursday ..27th	Manchester ..	330	..	..	600	750	1400	3050
Friday 28th	Ditto	..	..	..	1500	800	..	2300
Saturday ..29th	Ditto	..	..	150	..	1400	200	1750

Number of Passengers at Manchester office during Whitsun Week, 1847 —

May, 1847.	Manchester and Birmingham	Macclesfield.	Grand Junction	London and Birmingham	Total each Day.
Sunday 23rd	1687	171	57	25	1940
Monday 24th	2135	203	245	95	2678
Tuesday 25th	1883	205	168	99	2355
Wednesday 26th	3399	269	171	79	3918
Thursday ..27th	5195	318	201	96	6410
Friday 28th	5487	282	197	64	6030
Saturday ..29th	4371	259	196	114	4940

Total number of Passengers booked on the Manchester and Birmingham Section of the London and North Western Railway, for Whitsun Week, 1847, is 60,713.

Cost of printing "The Times" Newspaper.

No. 171.

At a meeting of the Eastern Counties Railway, in September, 1846, Mr. Hudson stated:—

"As proprietors of railways, they paid largely for advertisements, and he had been rather curious to see if *The Times* were the liberal people to the public which they professed to be when dealing with other men's property. He had been curious to see whether Mr. Walter, who said that this advice was constantly called into requisition in guiding the affairs of *The Times*, went along with the low charges and the low rate of interest which he proposed railway companies should receive. He had an advertisement before him which was published on a certain day, and for the insertion of which, whilst the *Morning Chronicle* charged £3 3s., *The Times* charged £3 18s. There were many similar cases to that, and it was certainly a very rich one in its way. He did not wish to exhort the *Morning Chronicle* to charge £3 18s., but rather to suggest to *The Times* the propriety of charging £3 3s. He should think that if *The Times* were content with 10 per cent. for their money, as railway proprietors were obliged to be, they should give an advantage to the public by charging about one-fourth of what they did at present for advertising."

To which remarks "The Times" of the 18th September, 1846, replied:—

"The cost of each single copy of *The Times*, as published to-day:—

Cost of paper for each copy of this day's publication....	2d.
Stamp	1½
Newsvendor's profit	1⅛
	4⅝
Sale to the public	5
Profit on each paper.....	0⅜d.

Now, according to our Royal censor, out of these three-eighths of a penny, one farthing and a half for each copy, are to be defrayed all the substantial expenses of the journal, reporters, printers, compositors, correspondents foreign and domestic, repair of machinery, and all the numerous burdens to which journalism is liable. We omit to speak of the contributors to the leading columns; but we suppose there are few persons blind to the necessity of retaining for this pur-

pose men of sound education, undoubted intelligence, and integrity beyond the temptation or suspicion of a bribe. It is obvious that no extent of circulation can by itself repay the outlay required for the complete management of a daily paper. Nay, increase of circulation is itself, after a certain point, an evil, for it entails the necessity of further appliances and a more numerous *corps*, for the due support of which recourse must be perpetually had to the profits on advertisements."

Competition in Railways bad.—No. 172.

Before the Select Committee on Railway Acts Enactments in 1846:—

"Mr. Robert Stephenson, when asked whether the lowering the fares might not be influenced by competing lines and competing canals, gave this decided answer;—'I have had so many cases of that kind brought before me, that I have come to the conclusion, that wherever combination is practicable, competition is impracticable. Therefore I say, let the Government be as stringent as they like with existing companies, but never excite competition; because by exciting competition, you increase the capital invested for giving the same convenience which would be otherwise obtained with less capital.'"

And before the Committee on the Stour Valley Railway, in 1846, Mr. R. Stephenson said:—

"Looking at the past, we may expect for some time to come that the hostile companies will go on devouring each other, though I hold the opinion very strongly that permanent competition is impossible. The object of companies who are in competition in laying out lines is generally for the purpose of maintaining the ground, in order that when the time does arrive for adjusting their differences they may not be trampled on by their neighbours. I have the strongest possible opinion that perpetual competition is impossible, and that after the country is occupied there will be an adjustment. The Great Western are great preachers of competition, yet it is within my own knowledge that treaties have been going on between them and the London and South Western, of which a territorial division has been the basis."

Toll for Coals.—No. 173.

Very conflicting arguments were used before a Parliamentary Committee in 1845, to prove the cost of conveying coals by railway; and for short distances it is clear they cannot be conveyed without loss at 1d. per ton per mile. The following memorandum is from actual work which has come under my own observation:—

During six months ending 30th May, 1846, 28,178 tons of coal were conveyed in 9,392 waggons a distance of six miles, being a mileage of 56,352 for waggons under load, and a total mileage of waggons run 112,704 miles. 28,178 tons at 1d. per ton per mile would realize £704 9s., and the actual expenses paid have been as follows: If we take the expenses at 1s. per mile, and work a train of 40 tons, as requested by the colliers, say 13 waggons, that would shew 2,167 trains at 1s. per mile per train, being six miles, would cost £650 exclusive of conveying the empty waggons back, which would cost almost the same money; or if we calculate the actual expenses for six months as under:—

Cost of Locomotive and Tender	£1,800	0	0
„ 200 Waggons, at £39 each	7,800	0	0
	£9,600	0	0
Interest on £9,600, at 7½ per cent for six months	£360	0	0
Wages to Engine Driver, at 36s. per week	46	16	0
„ Stoker, at 16s. per week	20	16	0
„ Breaksman, at 18s. per week	23	8	0
	450	0	0
Coke, Oil, Tallow, &c., at 4d. per mile, running 100 miles each day	260	0	0
	£710	0	0

From an average of 58 railways who obtained Acts in 1845, I find the average toll for coals is $2\frac{3}{5}\frac{3}{8}$d. per ton per mile, and out of these, ten lines are under ten miles in length, which average $2\frac{1}{2}\frac{1}{0}$d. per ton per mile, namely:—

	M.	F	C.	Coals per Ton.
Aberdare	8	5	2	..... 1d.
Cockermouth and Workington	8	6	7½	 3
Dunstable and London and Birmingham	7	0	0	..... 1½
Exeter and Crediton	5	6	0	 3
Glasgow, Barrhead, and Nielston Direct	8	7	8	 2
London and Blackwall Extension	1	6	0	..... 3½
Manchester, South Junction, and Altrincham	9	3	0	..... 1½
Middlebro' and Redcar	7	5	0	 2
North Woolwich	2	6	6	 2
Richmond (Surrey)	6	0	0	..... 1¼
				20½

Average—$2\frac{1}{20}$d. per ton per mile.

And from an average of 32 existing companies authorized to construct Branches or Extension lines, I find the average is $1\frac{3}{4}\frac{7}{8}$ d. per ton per mile, out of which fourteen are under ten miles in length, averaging $2\frac{3}{14}$d. per ton per mile, namely:—

	M.	F.	C.	Coals per Ton.
Ashton, Staleybridge, and Liverpool Junction (Ardwick Branch)	1	6	6	..... 3d
Edinburgh and Glasgow	6	0	2	..... 2½
Gravesend and Rochester	6	7	1	 3
Great North of England and Richmond	9	8	3	 2
Lancaster and Carlisle	4	2	4	 3
London and Brighton (Horsham Branch)	8	3	0	 2
London & S. Western (Metropolitan Extension)	2	0	0	 3
Manchester and Birmingham (Ashton Branch)	5	0	0	 2
Newcastle & North Shields (Tynemouth Exten.)	1	0	0	 1
North British	1	7	0	..... 2½
Preston and Wyre Branches	8	2	6	..... 1¾
South Eastern (Branch to Deal, &c.)	9	2	0	 2
,, (Tunbridge to Tunbridge Wells)	5	1	3	 2
York and Scarborough	3	0	5	..... 1¼
				31

Average—$2\frac{3}{14}$d. per ton per mile.

Various opinions on this subject may be seen in Salt's *Statistics and Calculations*. There is no doubt but coals may be conveyed long distances, under favourable circumstances, at a slow speed for 1d. per ton per mile with a profit.

Cost of publishing the Encyclopædia Britannica.

No. 174.

During a trial, the magnitude of the expenses of this truly national work, the "Encyclopædia Britannica," seventh edition, 21 volumes, quarto, was shown, and it was proved to have been no less a sum than £125,667 9s. 3d.—a sum which, when considered as the venture of two private individuals, is truly creditable to our native enterprise and energy. This amount of course includes every item of expenditure, amongst which the following are the most important:—

Contributions and Editing	£22,590	2	11
Printing	18,610	1	4
Stereotyping	3,317	5	8
Paper	27,854	15	7
Bookbinding	12,739	12	2
Engraving and Plate Printing	11,777	18	1

For the contribution of the dissertation in dispute, Dugald Stewart received from the firm of Constable and Co. £1,600, and for the accompanying dissertations by Sir James Mackintosh and Sir John Leslie, the present proprietors of the Encyclopædia paid £1,030. The cost of Professor Playfair's dissertation is not precisely stated, but if paid for at the same rate as Sir John Leslie's, it could not fall short of £500. For editing the volume the sum of £320 was paid, bringing up the total expenditure for the literary labour of this volume alone to £3,450. Of this outlay only £106,526 had as yet been returned to the proprietors, but we trust that the sale of the stock, which, as it embraces the works of so many celebrated men, must continue for many years, will ultimately reward the spirit and energy of its projectors.—*Douglas Jerrold's Weekly Newspaper.* [*Manchester Guardian*, 16th January, 1847.]

Cost of conveying heavy goods by Railway.

No. 175.

Mr. R. Stephenson made the following remarks before the Committee on the Stour Valley Railway in 1846:—

"I think that railways as instruments for the carriage of heavy goods, have not reached half their perfection or extent, and will not until we are permitted to separate the fast and slow trains. If we convey heavy goods at 15 miles an hour, I believe it will reduce the cost of conveyance to considerably lower than one-half of what it is

now; so that a large quantity of coal may come to London from the Midland districts. At present it costs us three farthings per ton per mile. In the North at Stockton and Darlington, where they convey the coal at 9 miles an hour, every charge is included, and they carry it at one halfpenny a ton per mile. The breakage of coal is so much increased by rapidity of movement that it becomes impossible to move ordinary coal waggons when they are on any of the main lines without springs. The public will never get the full advantage of railways until they can separate the slow traffic more or less from the quick traffic. Up to a certain extent the mixture does not add to the expense of conveyance, but when the mixture becomes very great, or the income of the railway is derived as much from goods as from passengers, then, in order to convey goods most economically, it becomes desirable to convey them at a speed of, say, from 15 to 18 miles an hour, coals at a speed not exceeding 15 miles an hour, for it is impossible to convey them at 1d. or ¾d. per ton per mile if they are to be hurried along at 25 miles or 30 miles an hour; the cost and the wear and tear are too great, besides coal is damaged very much by velocity."

Irregularities of Goods by Railway.—No. 176.

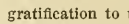
The city article of "The Times," 18th of November, 1847, gives the following remarks:—

"Complaints reach us regarding irregularities and losses in the conveyance of goods on railways. There can be no doubt that much injury is sustained in this way with which the general public never becomes acquainted, each isolated case of loss or inconvenience, although of serious moment to the individual, being too small in itself to enable the sufferer to create a stir about it, while the risk of legal proceedings, which would have been dreaded by the carriers of former times, is of course altogether disregarded by bodies who not only possess exclusive powers, but whose capital is reckoned by millions. One correspondent, engaged in a manufacturing business at Birmingham, writes:—'Will you allow me to direct public attention to the gross system of irregularity now existing in the carrying departments of the various railway companies? Since the commencement of the monopoly of carriage by the railway companies, and between August 13th and November 13th, we have had no less than 19 cases of irregularity, in many of which goods have been altogether lost. Complaints are attended by no good effects, and

indeed in nearly all instances they are totally disregarded. The only course, therefore, is to request your assistance in producing the necessary reform, and in thus correcting one of the greatest evils the mercantile community can suffer from, namely, that of delay and uncertainty in the transit of goods. I must observe, in conclusion, that the majority of cases of irregularity referred to rest with the London and North-Western Railway Company.'"

The above complaint, I believe, was made by Mr. Selby, of the Patent Tube Company, Smethwick, near Birmingham, and when we consider that the London and North-Western Company made so great a change on the 1st of June, 1847, in taking the carrying into their own hands, it is not to be wondered at that some occasional delays would take place; but these would appear comparatively small if compared with all the former complaints made which were distributed amongst 36 carriers; and if we consider that 20,000 tons, divided into more than 50,000 consignments are conveyed WEEKLY between 180 stations, and that there are 75,084 printed rates, and upwards of 30,000 registered letters written monthly by the officers in the Merchandise Department—in fact, the actual number of letters that passed through my own hands in September, 1847, was 8,957, being 4,151 sent and 4,806 received. I have met with many very unreasonable complaints; one gentleman at Manchester, I recollect, was very cross because he had been, according to his own statement, overcharged *six-eighths of a penny*; another gentleman at Birmingham was continually complaining to the chairman of delays which, on investigation, were generally found uncalled for, and in one case I recollect the goods had actually never been sent. Other companies also seem to have had their share of complaints, for, with reference to this fashionable mode of writing to the newspapers, Mr. Hudson stated at a meeting of the Eastern Counties Railway in September, 1846:—

"He often received communications containing matters of complaint, and the parties writing often said,—'If you don't attend to this immediately, I shall address the public through *The Times*.' His answer generally was,—'That he would attend to the subject; but that, if it would be any gratification to the parties to send to *The Times*, he had not the least possible objection.' He did nothing which he feared coming before the public, and if *The Times* thought it worth their while to publish these sort of things, he had not the least objection; for it saved him the trouble of answering them."



Speed on Railways too high for Permanent Way.

No. 177.

Before the Committee on the Birmingham, Wolverhampton and Stour Valley Railway in 1846, Mr. R. Stephenson said:—

"We are now in possession of speed that no permanent way in existence, broad or narrow, will be able to stand long. The wear and tear of the rails has been, in my opinion, nearly as the square of the speed. If it were perfect machinery in every respect, the wear and tear arising from concussions, ought to be exactly as the square of the speed, and I presume it ought to be directly as an engine weighing double the number of tons would cause double the amount of crushing. Indeed, I know that speed is the great trial of our present permanent roads. The proof is that we have been obliged to strengthen them about 16 or 18lb. per yard, and now there are some of about 90lb. This increase of speed, the weight remaining the same, is a direct and large sacrifice of the profits of the company, which has operated and is now operating with the London and Birmingham, and has led them to consider the propriety of duplicating the lines where they are compelled to run the heavy trains so quickly —that is between Tring and London. The interest of the capital they are about to expend to duplicate the line will be about £40,000 a year, the cost will be about £780,000." See No. 109, page 79.

Reduction of Fares on the London & Birmingham Railway.—No. 178.

In the Second Report of the Committee on Railway Acts Enactments in 1846, it is stated:—

"Mr. Creed states that the difference between the prices charged originally on the Birmingham Railway and the present prices is exactly one-third. The reductions on the first class in the half-year ending 30th June, 1844, were 17¼ per cent., and they caused an increase of passengers of 19½ per cent.; on the second class the reduction in the fares was 26⅔ per cent., and the increase in the number of passengers 61⅛ per cent; on the third class the reduction in the fares was 33⅓ per cent., and the increase in the number of passengers 259 per cent.; and the reductions have in most cases increased the revenue of the company. But were there to have been no immediate increase of the revenue, still a regard to the welfare and convenience of the community, which ought to be the object of all legislation would have demanded the reduction."

Mr. Strutt's Bill for the Regulation of Railways, in 1847.—No. 179.

Mr. Houldsworth, at a meeting of the Manchester and Leeds Company, 8th June, 1847, said:—

"If that bill were imposed upon them, he knew those who had the management of railways had no alternative but to abandon the whole thing to government. If government should take the responsibility, and if there were no objection on the part of the public, he thought there would be no objection on the part of the shareholders, so long as they were to stand in a position of such responsibility as they would be placed in by this bill. He did not think that the Railway Commissioners or Parliament understood what they were doing."

[It may be worth while to compare this with Mr. Houldsworth's opinion of Mr. Strutt, as given at page 88, No. 120.]

In a report of the Wilts, Somerset, and Weymouth Railway, 31st of August, 1847, it is stated:—

"This measure was, in various important points, founded on principles either novel or contrary to the spirit and practice of this country; and was so considered in its details, that without

accomplishing a single beneficial object otherwise unattainable, it would have tended to deteriorate the present system of railway management, and to unsettle the tenure and reduce the value of all railway property."

And in the "Railway Chronicle" of the 6th of March, 1847, are the following two letters:—

"Newcastle-on-Tyne, March 1.

"To the Right Hon. Lord Ossulston, London.

"My Lord,—An insidious and atrocious attempt to plunder and confiscate the railways is at present making in Parliament by Mr. Strutt, member for Derby, and other place-hunters. Let me suggest to you to oppose this villanous attempt upon public faith, credit, property, and the best interests of Great Britain, by rejecting *in toto* Strutt's bill in Parliament by your vote and interest in inducing others to do the same. The North of England, Scotland, and Ireland anxiously look forward to railways as the means of developing their immense mineral wealth, agriculture, &c., and thus supporting by giving constant employment to its millions, who will otherwise be starved out, and go to strengthen other nations. Really this measure of Strutt's is horrible to contemplate; it is that of robbers cutting down the tree for the sake of the fruit.

"An Elector of North Northumberland."

The second is addressed to Lord Morpeth:—

"My Lord,—I hope you will have the honesty to think for yourself in reference to Mr. Strutt's confiscation railway bill. You must then come to the conclusion that its object is most impertinent—meddling with private property. Government undertake to manage railways! Hear, my Lord, what the President of the Council (Lord Lansdowne) said early this session:—'It is universally admitted that a Government is the worst of cultivators, the worst of manufacturers, the worst of traders.' Why, then, should it be able to manage or control railways? Vote honestly, my Lord, in this matter, or railway interest will make your seat at the next election rather uncomfortable.

"A Yorkshire Elector."

But the most extraordinary remarks were the following, in consequence of being made by the very person who introduced the bills and supported them. In the House

of Commons, on the 21st June, 1847, Mr. Strutt calmly and deliberately delivered his opinion of interference thus:—

"Nothing could be more injurious than that any public board, appointed for the supervision of railways, should take upon itself even the appearance of interfering in the management of railways. He believed that such interference would be injurious to all parties; and therefore he was fully prepared to go with the right honourable gentleman opposite (Mr. Hudson) upon that point, and to state that nothing was further from the intentions of the government in promoting this bill than to sanction any interference with the management of the railway companies."

Oxford, Worcester, and Wolverhampton Railway.

No. 180.

The origin of this Railway was thus described by Mr. R. Stephenson to the Committee of the Stour Valley Railway, in 1846:—

"Q.—Is it a fact that this district applied to the London and Birmingham for accommodation and was refused, and was it in consequence of that refusal that the Oxford, Worcester, and Wolverhampton line was originally projected? A.—That, perhaps, is a rather harsh mode of representing it. But some of the London and Birmingham Board entertained a notion at that time that railways were not really fitted for the conveyance of heavy goods, and they did not seek to obtain the traffic which the country demanded; and then again, their accounts were kept in such a way as to make it appear that they lost money by the conveyance of goods. This was done by charging the goods with a portion of the fixed expenses, which would have been necessary, under any circumstances, even for conveying passengers. Therefore when you debit the goods department with its proportion of the fixed establishment of the railway then it does appear a loss to carry goods. There may be one or two of the Board now left who entertain their old opinions, but I know the management and system has undergone a complete revolution in that respect. I have always entertained the opinion that they ought to come down with their fares and carry heavy goods, and have urged it on the Board. But I do not move out of the engineering department of the company."

Long Passenger Train.—No. 181.

On the 23rd August, 1847, the Manchester, Sheffield, and Lincolnshire Railway conveyed, in one train, from Ashton and neighbourhood to Sheffield, 1874 passengers in 46 carriages; and on the 24th August, 1847, 3080 passengers in 66 carriages to Dunford Bridge.

Qualification for a Railway Director.—No. 182.

The qualification for a Railway Director, in the Acts of 1846, varies from 10 to 100 shares, and in the Acts of 1845, from 10 to 50 shares.

Passengers on the Midland Railway during Whitsun Week, 1847.—No. 183.

Number of Passengers on the Midland Railway, for the 23rd, 24th, and 25th May, 1847:—

	Sunday 23rd.	Monday 24th.	Tuesday 25th.	Total.
Derby Station	641	1,972	1,286	3,899
North Branch	3,420	3,507	2 134	9,061
South Syston and Melton	1,420	2,057	2,572	6,049
West Branch	1,141	1,214	1,014	3,369
Nottingham and Lincoln	633	964	1,393	2,990
Sheffield and Rotherham	1,609	7,168	3,470	12,247
Leeds and Bradford	3,804	5,202	6,535	15,541
	12,668	22,084	18,404	53,156

FINIS.

INDEX.

PRINTED BY BRADSHAW AND BLACKLOCK, 27, BROWN-STREET, MANCHESTER AND 59, FLEET-STREET, LONDON.